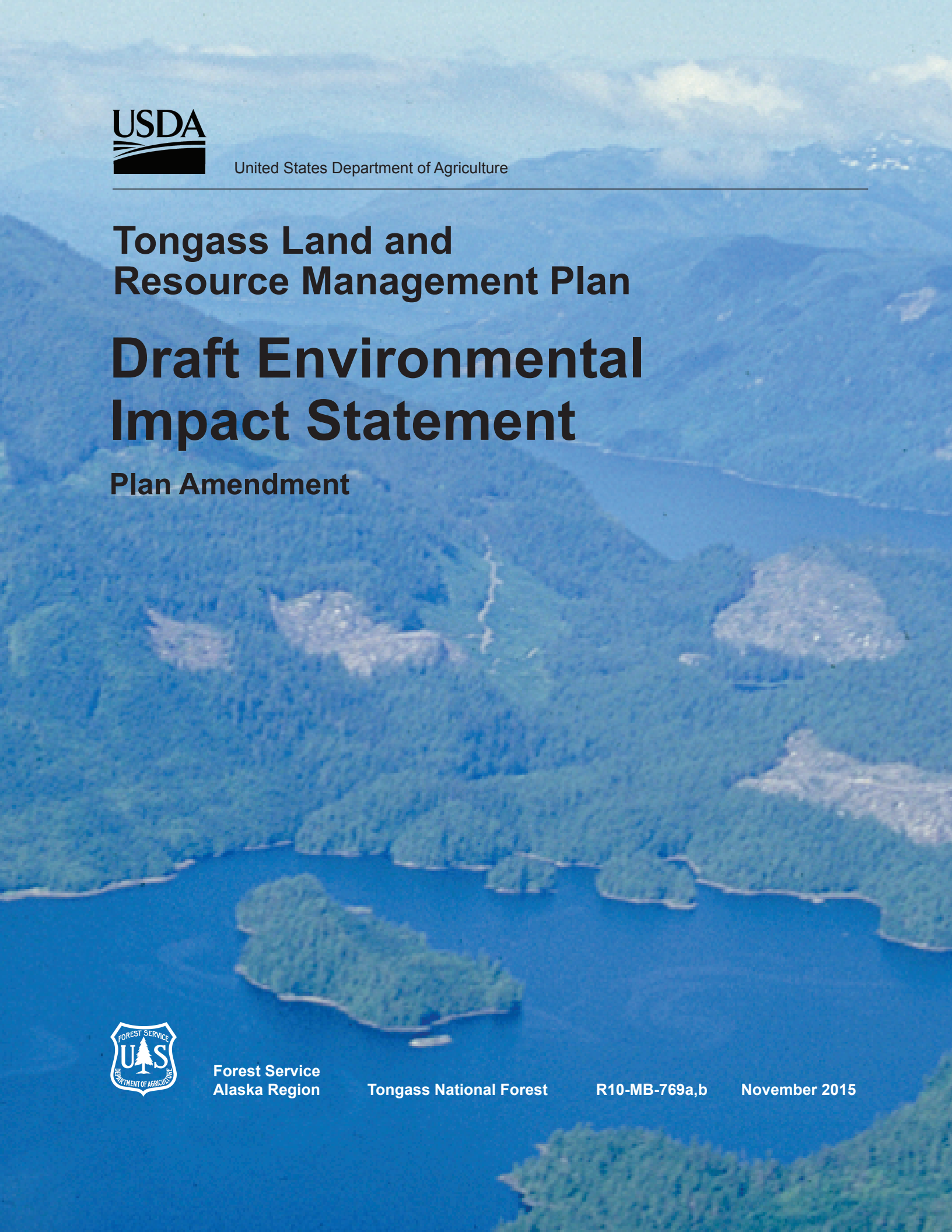

USDA

United States Department of Agriculture

Tongass Land and Resource Management Plan

Draft Environmental Impact Statement

Plan Amendment

Forest Service
Alaska Region

Tongass National Forest

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Tongass Land and Resource Management Plan Amendment

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Lead Agency:	USDA Forest Service
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Abstract

Secretary's Memorandum 1044-009, addressing Sustainable Forestry in Southeast Alaska, (issued July 2, 2013), and the 5-Year Forest Plan Review (completed in September 2013) indicated that conditions on the land and demands of the public require the Tongass to modify the 2008 Forest Plan. In the Memorandum, the Secretary of Agriculture, Thomas Vilsack, asked the Forest Service to "Strongly consider whether to pursue an amendment to the Tongass Forest Plan. Such an amendment would evaluate which lands will be available for timber harvest, especially young growth timber stands, which lands should be excluded, and additional opportunities to promote and speed transition to young growth management..." and to "…continue to seek input from and work with stakeholders in the region towards this transition." The Tongass Advisory Committee (TAC) was established under the Federal Advisory Committee Act and was approved by the Secretary to "…provide advice to the Forest Service on how to expedite the transition to young growth management." The 5-Year Forest Plan Review also highlighted a need to make the development of renewable energy resources more permissible.

This Draft EIS responds to the Secretary's Memo and the 5-Year Forest Plan Review by analyzing five alternatives for amending the Plan, including the No-Action alternative. A separate document, called the Proposed Land and Resource Management Plan (Forest Plan), has been published with this Draft Environmental Impact Statement to represent the Forest Plan under the preferred alternative (Alternative 5). Alternative 5 is based on Tongass Advisory Committee's underlying principles, general approach, and recommendations. Appendix F displays a side-by-side comparison of the alternatives to show how they differ from the preferred alternative. Four key issues are identified: 1) transitioning to young-growth-based timber management in 10 to 15 years in an ecologically, socially, and economically sustainable manner; 2) promoting the development of renewable energy projects where it is compatible with National Forest purposes; 3) the effects of potential timber harvest activities in roadless areas; and 4) the effects of forest management on wildlife habitat and the Conservation Strategy. The five alternatives provide a range of options for addressing the issues. Direct, indirect, and cumulative effects of the alternatives are compared and disclosed in Chapters 2 and 3, based on inventory data and modeling.

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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ABC Islands	Admiralty, Baranof, and Chicagof Islands
ACHP	Advisory Council on Historic Preservation
ACS	American Community Survey
ADEC	Alaska Department of Environmental Conservation
ADED	Alaska Department of Economic Development
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities
AEA	Alaska Energy Authority
AEL&P	Alaska Electric Light & Power
AF	Alluvial Fan
AFHA	Anadromous Fisheries Habitat Assessment
AKEPIC	Alaska Exotic Plants Information Clearinghouse
Alaska DCRA	Alaska Department of Community and Regional Affairs
AMHS	Alaska Marine Highway System
AMS	Analysis of the Management Situation
ANCSA	Alaska Native Claims Settlement Act of 1971
ANHP	Alaska Natural Heritage Program
ANILCA	Alaska National Interest Lands Conservation Act of 1980
AP&T	Alaska Power & Telephone
APLIC	Avian Power Line Interaction Committee
ASQ	allowable sale quantity
ATM	access and travel management
AVSP	Alaska Visitor Statistics Program
BBER	Bureau of Business and Economic Research
BCR	Bird Conservation Region
BE	biological evaluation
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practice
BP	before present
°C	degrees Celsius
CA	Census Area
CDP	Census Designated Places
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMAI	culmination of mean annual increment
CO	carbon monoxide
Corps	U.S. Army Corps of Engineers
CUA	Community Use Area
DBH	diameter at breast height
DCCED	Department of Commerce, Community, and Economic Development
DEIS	Draft Environmental Impact Statement

Contents

DEM	Digital Elevation Model
DOL	Department of Labor
DPS	distinct population segment
EA	environmental assessment
EFH	essential fish habitat
EIA	U.S. Energy Information Administration
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act
ESA	Endangered Species Act
ESI	Existing Scenic Integrity
ESU	Evolutionarily Significant Unit
°F	degrees Fahrenheit
FCRPA	Federal Cave Resources Protection Act
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FIA FHM	Forest Inventory and Analysis-Forest Health Monitoring
FLPMA	Federal Land Policy and Management Act
FORPlan	Previous Forest Planning Model
Forest Plan	Tongass Land and Resource Management Plan
FP	Flood Plain
FPA	Federal Power Act
FRESH	Forest Resource Evaluation System for Habitat
FR	Federal Register
FRPL	free and reduced-price lunch
FSM	Forest Service Manual
FY	fiscal year
GCRP	(U.S.) Global Change Research Program
GIS	geographic information system
GMU	Game Management Unit
GSA	General Services Administration
HC	High Gradient Contained
HCA	Habitat Conservation Area
HSI	Habitat Suitability Index
IDT	Interdisciplinary Team
IFA	Inter-Island Ferry Authority
IPCC	Intergovernmental Panel on Climate Change
IPEC	Inside Passage Electrical Cooperative
IRA	Inventoried Roadless Area
IRP	Integrated Resource Plan
km	kilometer
kW	kilowatt
kWh	kilowatt hour
LiDAR	Light Detection and Ranging
LSTA	Logging System and Transportation Analysis
LTF	log transfer facility

LTSP	Long-Term Soil Productivity
LTSY	long-term sustained yield
LUD	Land Use Designation
LWD	large woody debris
MAP	mean annual precipitation
MBTA	Migratory Bird Treaty Act
MBF	thousand board feet
MIS	Management Indicator Species
MM	Moderate Gradient Mixed Control
MMBF	million board feet
MMI	Mass Movement Index
MMPA	Mammal Protection Act
MOU	Memorandum of Understanding
MVUM	Motor Vehicle Use Map
MW	megawatt
MWh	megawatt hour
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act of 1976
NFS	National Forest System
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NPS	National Park Service
NRDC	Natural Resources Defense Council
NRIS	Natural Resource Information System
NSLP	National School Lunch Program
NTU	nephelometric turbidity unit
NVCS	National Vegetation Classification Standard
NVUM	National Visitor Use Monitoring
NWI	National Wetland Inventory
OGR	old-growth reserve
OHV	off-highway vehicle
P	Primitive
PCE	Power Cost Equalization
PDO	Pacific Decadal Oscillation
PEIS	Programmatic EIS
PM_{10}	particulate matter with a diameter of less than 10 microns in size
$PM_{2.5}$	particulate matter with a diameter of less than 2.5 microns in size
PNW	Pacific Northwest
POG	productive old growth
ppm	parts per million
PTSQ	projected timber sale quantity
PWSQ	projected wood sale quantity
R	Rural

RARE	Roadless Area Review and Evaluation
RAW	reasonable assurance of windfirmness
RM	Roaded Modified
RMA	Riparian Management Area
RN	Roaded Natural
RNA	Research Natural Area
Roadless Rule	Roadless Area Conservation Rule
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
SATP	Southeast Alaska Transportation Plan
SDEIS	Supplemental Draft Environmental Impact Statement
SDM	Size-Density Model
SEACC	Southeast Alaska Conservation Council
SEAPA	Southeast Alaska Power Agency
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Office
SIO	Scenic Integrity Objective
SMS	Scenery Management System
SNAP	Scenarios Network for Alaska & Arctic Planning
SO_2	sulfer dioxide
SPM	Semi-Primitive Motorized
SPNM	Semi-Primitive Non-Motorized
SPTH	site potential tree height
SUA	special use authorization
SYL	sustained yield limit
TAC	Tongass Advisory Committee
TRUCS	Tongass Resource Use Cooperative Survey
TSC	Transportation Systems Corridor
TTRA	Tongass Timber Reform Act of 1990
TUS	Transportation and Utility System
TWYGS	Tongass-wide Young-Growth Studies
U	Urban
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VCU	Value Comparison Unit
VMS	Visual Management System
VPR	Visual Priority Route
WAA	Wildlife Analysis Area
WCF	Watershed Condition Framework
WRCC	Western Regional Climate Center

CHAPTER 1
PURPOSE AND NEED

Purpose and Need

Introduction

Forest land and resource management planning is a process for developing, amending, and revising land and resource management plans for each of the National Forests in the National Forest System (NFS). Forest plans are required by the National Forest Management Act of 1976 (NFMA) (16 United States Code [U.S.C.] parts 1600-1687). The 16.7-million-acre Tongass National Forest was the first forest to complete a Tongass Land Management Plan under the NFMA in 1979. That Forest Plan was amended in 1986 and 1991 and revised in 1997. A final Supplemental Environmental Impact Statement (SEIS) was completed in 2003, which further evaluated roadless areas for their wilderness potential. The Forest Plan was amended again in 2008 in response to a Ninth Circuit Court ruling and a 5-Year Plan Review completed in 2005. The revised Plan was amended 24 times between the 1997 revision and the 2008 amendment, primarily to adjust small old-growth habitat reserve boundaries and for electronic/communication site designation. Since the 2008 amendment, the plan has been amended to establish the Héen Latinee Experimental Forest, disestablish the Young Bay Experimental Forest, add communication sites to the list in Appendix E of the plan, modify small old-growth habitat reserves, and make minor corrections to the plan.

On July 2, 2013, Secretary of Agriculture, Thomas Vilsack, issued Memorandum 1044-009, *Addressing Sustainable Forestry in Southeast Alaska* (USDA 2013), which expressed the Secretary's intent to transition the Tongass National Forest to a young growth–based timber program in 10 to 15 years, more rapidly than considered in the 2008 Forest Plan. The Secretary asked that the Forest Service "strongly consider whether to pursue an amendment to the Tongass Forest Plan. Such an amendment would evaluate which lands would be available for timber harvest, especially young growth timber stands, which lands should be excluded, and additional opportunities to promote and speed transition to young-growth management." The Secretary also asked that a determination of whether to initiate an amendment be completed by September 30, 2013.

The Forest Service completed a Five-Year Review of the Forest Plan in September 2013. The results of the Five-Year Review and the Secretary's Memorandum led to the Tongass Forest Supervisor making a determination that "…conditions on the land and demands of the public require the Tongass to modify the 2008 Forest Plan" (USDA Forest Service 2013a). A notice of intent (NOI) to prepare an environmental impact statement was published in the Federal Register on May 27, 2014 (79 FR 30074) initiating a 30-day scoping period. Comments from the Five-Year Review and from scoping requested a transition to young-growth timber harvesting, ways to make renewable energy projects easier to implement, and a review of the 2001 Roadless Area Conservation Rule (Roadless Rule) inventoried roadless areas (IRAs). All comments were taken into consideration in identifying the scope of this Forest Plan amendment.

This Draft Environmental Impact Statement (DEIS), prepared by the USDA Forest Service describes and analyzes proposed changes to the Forest Plan to accomplish the transition to young-growth management as provided in the Secretary's Memorandum. This DEIS evaluates which lands will be available for timber harvest, especially young-growth timber stands, and any changes or additions to management direction needed to promote and speed the transition

to young-growth management while maintaining a viable timber industry in Southeast Alaska. This DEIS also describes and analyzes proposed changes related to renewable energy development, and other changes suggested in the Five-Year Review and internal and external scoping, as warranted. The scope of the analysis is limited to these proposed changes.

This DEIS analyzes in detail four alternatives for amending the Plan in addition to the No-Action Alternative (Alternative 1). The analysis is published in two volumes: the first volume contains the EIS, and the second volume contains the appendices to the DEIS. A complete Forest Plan Land Use Designation (LUD) map is provided for each of the alternatives in the Map Packet which accompanies the DEIS.

A separate document titled Proposed Tongass Land and Resource Management Plan (Forest Plan) is also being published and represents the complete amended Forest Plan based on the Preferred Alternative (Alternative 5). Chapter 2 and Appendix F in the DEIS describe how the other alternatives compare to the Alternative 5. Instead of repeating all of the proposed changes in management direction common to Alternatives 1-4 and Alternative 5, management direction of the alternatives is displayed in a side-by-side format to demonstrate how and where it differs from Alternative 5.

This DEIS describes and analyzes proposed changes to the 2008 Forest Plan and tiers to the 1997 Tongass Land Management Plan Revision Final Environmental Impact Statement (FEIS), the 2003 Final SEIS for Roadless Area Evaluation for Wilderness Recommendations, and the 2008 Tongass Land and Resource Management Plan Amendment FEIS and Record of Decision (ROD). Where appropriate, information in these documents that is relevant to analysis in this DEIS is cited and incorporated by reference.

Forest Planning History on the Tongass National Forest

The NFMA, passed in 1976, required each national forest to develop a land and resource management plan and revise its plan every 10 to 15 years. The Tongass became the first National Forest to complete a Forest Plan under NFMA in April 1979. The Alaska National Interest Lands Conservation Act (ANILCA) was signed into law December 2, 1980 (Public Law 96-187) and provided varying degrees of protection to over 157,000,000 acres of public lands in Alaska, including NFS lands. The 1979 Forest Plan was amended in 1986, reflecting changes mandated by ANILCA. The Forest Plan revision process began in 1987 and a DEIS was published in June 1990. On November 28, 1990, the Tongass Timber Reform Act (TTRA) was passed (Public Law 101-626) and amended ANILCA to protect certain lands in the Tongass National Forest in perpetuity, to modify certain long-term timber contracts, to provide for protection of riparian habitat, and for other purposes. The 1979 Forest Plan was amended in February 1991 to incorporate the TTRA changes. The Forest Plan Revision process continued with a Supplement to the DEIS published in September 1991, which incorporated all changes required by TTRA and evaluated new alternatives. Following completion of the June 1990 DEIS, TTRA designated five new wilderness areas and incorporated additional acres into an existing wilderness area. Therefore, the Forest Service did not reconsider roadless areas for potential wilderness recommendation. The Forest Service prepared an FEIS in the fall of 1992, but did not publish an associated ROD. The Regional Forester found there was new information that should be collected to respond to the

National Forest Planning Regulations (36 CFR 219.19). That process led to the 1997 FEIS and the Forest Plan Revision ROD (1997 ROD).

The 1997 Forest Plan was the subject of 33 separate appeals by organizations and individuals. In 1999, the Under Secretary of Agriculture affirmed the Regional Forester's decision regarding all 33 appeals, based on the 1997 Tongass Forest Plan Revision Final EIS and planning record. The Under Secretary issued a new ROD (1999 ROD) for the 1997 Tongass Land Management Plan Revision.

Two lawsuits challenged the 1997 and 1999 RODs in the U.S. District Court for the District of Alaska. The Alaska Forest Association and some Southeast Alaska communities challenged many aspects of the 1997 Plan and the process by which the 1999 ROD was issued. The Sierra Club and other conservation groups challenged the lack of wilderness area consideration and potential recommendations in the 1997 Plan Revision, FEIS and ROD. The Court issued a single opinion for both cases in March 2001.

In the Alaska Forest Association case *(Alaska Forest Association v. United States Department of Agriculture.* No. J99-0013 CV [JKS] [D. Alaska]), the U.S. District Court upheld the 1997 ROD against all challenges, but held that the 1999 ROD was not properly adopted. The Court vacated the 1999 ROD and enjoined the Forest Service from implementation. The Court further directed the Forest Service to prepare a SEIS addressing the changes from the 1997 Tongass Forest Plan. Because of the extensive public involvement and scientific review in the 1997 ROD, and its thorough policy and legal review of the administrative appeal process and by the District Court, the Forest Service did not propose changes to the 1997 ROD similar to those enjoined by the District Court.

In the Sierra Club challenge of the 1997 Tongass Forest Plan Revision FEIS (*Sierra Club v. Lyons*, No. J00-0009 CV [JKS] [D. Alaska]), the Ninth Circuit Court found the 1997 Tongass Forest Plan should have considered making wilderness recommendations in the FEIS. The Court ordered the Forest Service to prepare a SEIS evaluating wilderness recommendations for roadless areas on the Tongass and provide the relative contribution to the National Wilderness Preservation System in its Analysis of the Management Situation. The Forest Service issued a Final SEIS and ROD for Roadless Area Evaluation for Wilderness Recommendations in February 2003, and no new wilderness areas were recommended in the ROD.

The Natural Resources Defense Council (NRDC) filed a lawsuit (referred to as NRDC I) in the U.S. District Court of Alaska in December 2003 challenging the 1997 Forest Plan and six timber sales. In January 2004 they filed a separate lawsuit on a seventh timber sale (referred to as NRDC II) and another lawsuit challenging an eighth sale in March 2004 (referred to as NRDC III). The District Court upheld the 1997 Forest Plan and related National Environmental Policy Act (NEPA) documents on all claims in September 2004. NRDC appealed this ruling to the Ninth Circuit Court of Appeals. The Ninth Circuit Court issued a ruling on NRDC I and NRDC II in August 2005 *(Natural Resources Defense Council, et al., v. United States Forest Service, et al., 421 F.3d 797 [9th Cir.2005]))*. It found inadequacies primarily relating to the NEPA process for the 1997 Forest Plan. These inadequacies dealt with the timber demand estimates, the range of alternatives related to timber demand, and the cumulative effects analysis related to activities on non-NFS lands. While this process was taking place, the Forest completed a 5-Year Review of the Forest Plan. This review identified a number of items that could lead to adjustments to the Plan.

The 2008 Forest Plan was the subject of 15 separate appeals by organizations and individuals; however, one of those appeals was subsequently dismissed because its content did not meet the requirements of appeals (36 CFR 217.9). In August 2008, the Chief of the Forest Service affirmed the Regional Forester's decision regarding all appeals.

On May 24, 2011, the Alaska District Court vacated the Tongass exemption and reinstated the 2001 Roadless Rule on the Tongass National Forest (*Organized Village of Kake, et al. v. USDA, et al.*). As a result, the Tongass National Forest was subject to the provisions of the 2001 Roadless Rule. The State of Alaska subsequently appealed the District Court's decision and the Ninth Circuit Court reversed the district court's decision and remanded the case to the lower court for further consideration. On July 29, 2015, the Ninth Circuit Court issued its en banc decision in *Organized Village of Kake v. U.S. Dept. of Agriculture, 11-35517,* upholding the Alaska District Court's reinstatement of the Roadless Rule. Thus, the Tongass has been subject to the Roadless Rule since 2011 and remains so today.

The 2012 planning rule for land management planning for the National Forest System was published in the Federal Register on April 9, 2012 (77 FR 21162), and it became effective on May 9, 2012. It was developed through the most collaborative rulemaking effort in Agency history to ensure an adaptive land management planning process that is inclusive, efficient, collaborative and science-based to promote healthy, resilient, diverse and productive National Forests and Grasslands. In January 2015, the Forest Service published the final planning directives, the key set of agency guidance documents that direct implementation of the 2012 planning rule.

This proposed plan amendment was developed under the provisions in the 2012 Rule and changes made to the 2008 Forest Plan are presented in Chapter 5 of the proposed Forest Plan. Only those changes that were made to the 2008 Forest Plan are described and analyzed in this DEIS.

Purpose and Need

Purpose

The Forest Service determined that it is necessary to amend the *2008 Tongass Land and Resource Management Plan* (Forest Plan). Amending the Forest Plan originates from the July 2013 memo from the Secretary of Agriculture directing the Tongass National Forest to transition its forest management program to be more ecologically, socially, and economically sustainable, while also being responsive to comments from the Five-Year Review of the Forest Plan. The purpose of this plan amendment is to:

- Review lands within the plan area to determine suitability for timber production, especially young-growth timber stands.
- Identify the projected timber sale quantity (PTSQ) and the sustained yield limit (i.e., the ecological yield of timber that can be removed annually on a sustained yield basis).
- Establish plan components (e.g., standards and guidelines) for young-growth forest management and renewable energy development to guide future project decision-making.

- Disclose and assess the direct, indirect, and cumulative impacts of the reasonably foreseeable future actions resulting from the management actions in the draft amended Forest Plan, environmental impact statement and draft alternatives pursuant to the requirements of the NEPA, its implementing regulations, and other applicable laws.
- Consolidate modifications made to the Forest Plan since its approval.

Need

An amendment is necessary for responding to the July 2013 direction from U.S. Department of Agriculture (USDA) Secretary Tom Vilsack outlined in the Secretary's Memorandum 1044-009. The memorandum directs management of the Tongass National Forest to expedite the transition away from old-growth timber harvesting and towards a forest products industry that uses predominantly second-growth – or young-growth – forests. Secretary Vilsack's memorandum also guides that the transition should be implemented in a manner that preserves a viable timber industry that provides jobs and opportunities for Southeast Alaska residents. USDA's goal is to effectuate this transition, over the next 10 to 15 years, so that at the end of this period the vast majority of timber sold by the Tongass will be young growth. This timeframe will conserve old-growth forests while allowing the forest industry time to adapt. The 2008 Forest Plan currently provides for a transition to young growth over time, but there are challenges in establishing an economically viable young-growth forest management program due to the relatively young age of the available stands, market conditions, and other factors. Secretary Vilsack's direction requires Forest Plan amendments to guide future management of NFS lands and allocation of resources on the Tongass National Forest under the multiple-use and sustained yield mandate.

The need to amend the plan is further corroborated by the Five-Year Review of the Forest Plan, completed in 2013, which concluded that conditions on the land and demands of the public necessitate the Tongass National Forest to make changes to the Forest Plan. Concerns were consistently expressed during the Five-Year Review regarding the impact of rising fossil fuel prices and increasing climate change on the quality of life in Southeast Alaska. Changes to the Forest Plan are needed to make the development of renewable energy resources more permissible, including considering access and utility corridors to stimulate economic development in Southeast Alaska communities, and provide low-carbon energy alternatives, thereby displacing the use of fossil fuel.

Forest Location and Description

The 16.7-million-acre Tongass National Forest (Tongass or Forest) occupies about 7 percent of the area of Alaska. The Tongass is located in the southeastern portion of the state (the area commonly called the panhandle of Alaska or Southeast Alaska) and extends from Dixon Entrance in the south to Yakutat Bay in the north, and is bordered on the east by Canada and on the west by the Gulf of Alaska. The Tongass extends approximately 500 miles north to south and approximately 120 miles east to west at its widest point. Figure 1-1 is a vicinity map of the Forest.

In December 2014, the President signed into law the Carl Levin and Howard P. 'Buck' McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291), which contained provisions to convey 70,000 acres from the Tongass to Sealaska, a regional Native corporation; change the land allocation of over 150,000 acres to LUD II (non-development); and allow for the harvest of trees prior to the culmination of mean annual increment of growth to facilitate the

transition away from commercial timber harvest of old-growth stands among other provisions.

The Tongass includes a narrow mainland strip of steep, rugged mountains and icefields and more than 1,000 offshore islands known as the Alexander Archipelago. Together, the islands and mainland have nearly 11,000 miles of meandering shoreline, with numerous bays and coves. A system of seaways separates the many islands and provides a protected waterway called the Inside Passage. Federal lands comprise about 95 percent of Southeast Alaska, with about 80 percent in the Tongass National Forest and most of the rest in Glacier Bay National Park and Preserve. The remaining land is held in state, Native corporations, and other private ownerships.

Most of the area of the Tongass is undeveloped. Approximately 74,000 people inhabit Southeast Alaska, primarily in 32 communities located on islands or mainland coastal areas. Only eight of the communities have populations greater than 1,000 persons. Most of these communities are surrounded by, or adjacent to, NFS land. Only three communities are connected to other parts of the mainland by road: Haines and Skagway in the north and Hyder in the southeast.

Public Issues

The economies of Southeast Alaska's communities rely on the Tongass National Forest to provide natural resources for uses such as fishing, timber harvesting, recreation, tourism, mining, and subsistence. Maintaining the abundant natural resources of the Forest, while providing opportunities for their use, is a major concern of Southeast Alaska residents.

Ranger District offices on the Tongass National Forest are located in Yakutat, Juneau, Hoonah, Sitka, Petersburg, Wrangell, Thorne Bay, Craig, and Ketchikan. There are also two National Monuments; Admiralty Island is managed by a Monument Ranger who shares an office in Juneau with the Juneau District Ranger and Misty Fiords managed by the Ketchikan District Ranger in Ketchikan (Figure 1-1).

Public Input

Identification of issues helps define or predict the resources or uses that could be most affected by the management of NFS lands. These issues are used as a basis to formulate management alternatives or to measure differences between alternatives.

An NOI to prepare an environmental impact statement was published in the Federal Register on May 27, 2014 (79 FR 30074) initiating a 30-day public scoping period. The NOI asked for public comment on the proposal until June 26, 2014. The Forest Service received approximately 124,000 letters and of these, 250 letters were unique. For this DEIS, comments and information from a wide variety of commenters including Forest Service personnel, public, other agencies and non-governmental organizations that related to amending the Forest Plan were considered. This information included the following:

- Public input expressed during project-level NEPA analyses over the past several years;
- Public input received during the 5-year review, and
- Public input received in response to the Notice of Intent and the Web site for this EIS.

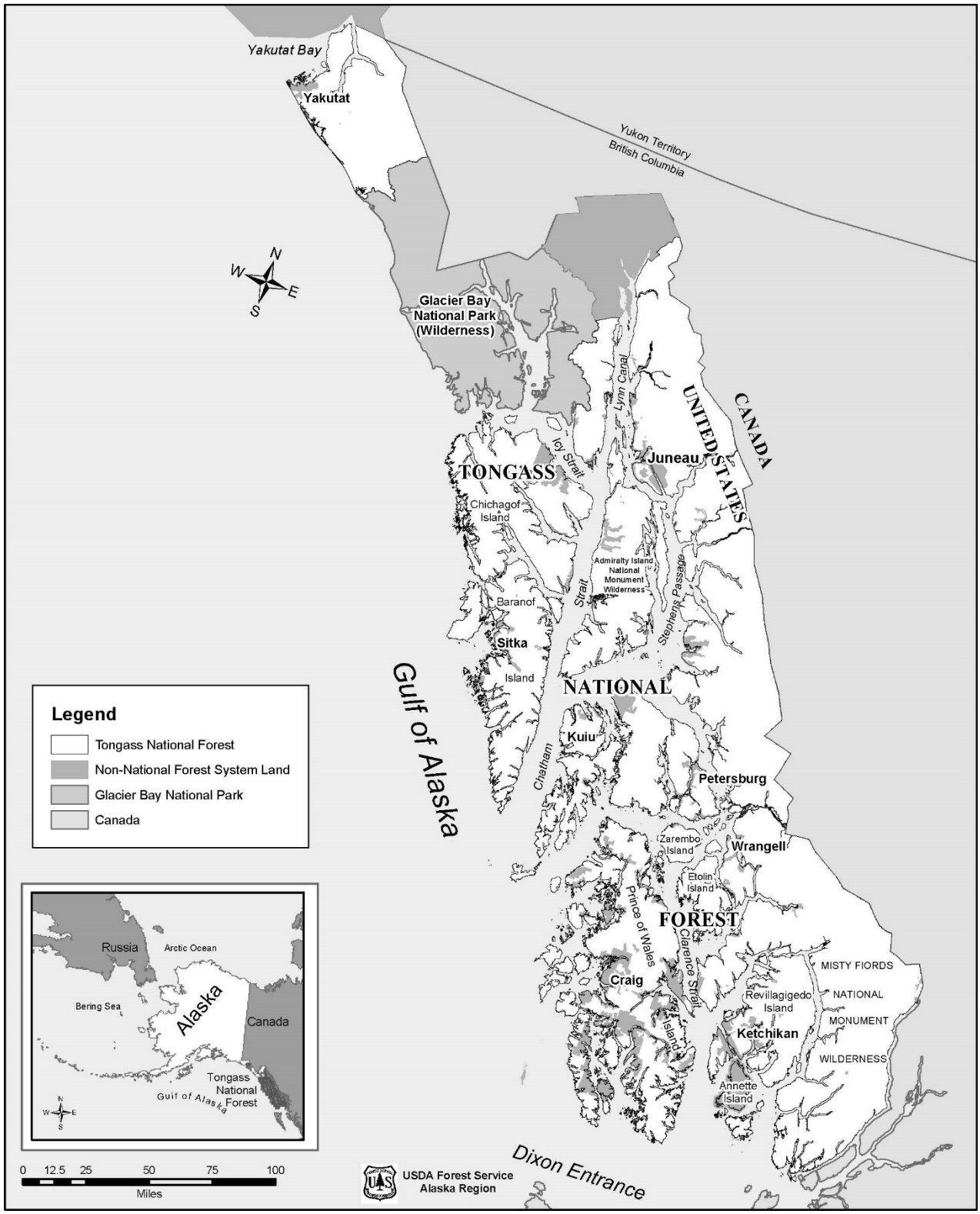

Figure 1-1.
Tongass National Forest Vicinity Map

Public involvement activities that have taken place since May 2014 include the following:

- The Notice of Intent published in the Federal Register in May 2014. The notice initiated the scoping process, which will help guide the development of the EIS. The scoping comment period was open between May 27, 2014 and June 26, 2014. Approximately 124,000 letters were received during the scoping comment period from federal and state agencies, individuals, non-governmental organizations, businesses, and Native corporations. Of these, 250 letters were unique. Individual comment letters can be accessed online at: https://cara.ecosystem-management.org/Public/ReadingRoom?Project=44483
- A Youth Advisory Council from Ketchikan High School was established on December 11, 2014. Six students (and two alternates) have been participating in this planning effort.
- A Forest Plan Amendment Web site was developed in 2014 and has been maintained to inform and engage the public since then. It is updated as new information is developed or published and provides a mechanism for public input. This site can be accessed at: http://www.fs.usda.gov/detail/tongass/landmanagement/?cid=stelprd3801708
- Government-to-government consultation has been conducted throughout the process, and is ongoing, with federally recognized Tribes.
- In January and February 2015, open houses were held in Juneau, Sitka, and Ketchikan to engage the public in this planning process and share information about the progress being made on the Proposed Forest Plan Amendment and DEIS.
- The USDA established a Federal Advisory Committee to advise the Secretary and Chief on transitioning the Tongass to young-growth forest management. The committee, known as the Tongass Advisory Committee (TAC), consists of members from the timber industry, conservation community, Native interests, state and local governments and other interests. In May of 2015, the TAC provided the Secretary with a comprehensive package of Forest Plan amendment recommendations.

Significant Issues

When identifying issues to be analyzed in the environmental analysis, it is helpful to ask, “Is there disagreement about the best way to use a resource, or resolve an unwanted resource condition, or potentially significant effects of a proposed action or alternative?” If the answer is “yes,” the Forest Service may benefit from subjecting the issue to analysis. This is called a significant issue. Entire resources cannot be issues by themselves, but concerns over how a resource may be affected by the proposal can be issues.

Significant issues are those related to significant or potentially significant effects and are defined as those directly or indirectly caused by implementing the proposed action or alternative. These issues drive the range of alternatives and effects analysis.

The Four Significant Issues

The Forest Service identified the following significant issues during scoping.

Issue 1 –Young Growth Transition

The Secretary of Agriculture asked the Forest Service to transition to a young-growth-based timber management program on the Tongass National Forest in 10 to 15 years, which is more rapid than planned. This transition is intended to support the Tongass managing its forest for an ecologically, socially, and economically sustainable forest management program and reduce old-growth harvest while still providing economic timber to support the local forest products industry.

The issue concerns financial efficiency, salability, and volume of future timber sales. It also relates to the potential local employment and revenues generated for communities in the local area. Young-growth stand growth rates, sustainable harvest rates, the amount of old-growth harvest needed during transition to sustain the timber industry, also known as "bridge timber," and the locations where young-growth harvest would take place are some of the factors to be considered.

Issue 2 –Renewable Energy

The development of renewable energy projects on the Tongass would help Southeast Alaska communities reduce fossil fuel dependence, stimulate economic development, and lower carbon emissions in the Region.

This issue relates to comments received during the Five-Year Review of the Forest Plan. The Forest Service should promote the development of renewable energy projects to help Southeast Alaska communities reduce fossil energy dependence, where it is compatible with National Forest purposes and to ensure that the planning, construction, and operation of projects protect and effectively use NFS lands and resources.

Issue 3 –Inventoried Roadless Areas

Timber harvest and road building that occurred in roadless areas before the 2001 Roadless Area Conservation Rule (Roadless Rule) was enacted and during the Tongass exemption period changed the values or features that often characterize inventoried roadless areas in some locations.

Issues and concerns received during scoping as well as during the Five-Year Review process expressed concerns about roadless areas on the Tongass; both in favor of protections afforded under the 2001 Roadless Rule as well as requesting that the forest plan be amended to address the significant changes brought about by its re-instatement on the Tongass.

Some people believe roadless areas on the Tongass should be allowed to evolve naturally through their own dynamic processes and should be afforded protection that ensures this will occur. Others believe that limiting road construction and reconstruction or other management actions in roadless areas might restrict the delivery of goods, services, and activities that these areas might otherwise provide.

Roadless areas are considered important because they support a diversity of aquatic and terrestrial habitats, species, and communities, and play an important

role in helping to conserve native plant and animal communities and biological diversity. They also provide people with unique recreation opportunities.

During the Tongass exemption period and before the 2001 Roadless Rule was enacted, road construction, reconstruction, and the cutting, and sale of timber in some IRAs occurred. As a result, these activities in some IRAs may have altered the roadless characteristics.

Issue 4 – Wildlife Habitat and the Conservation Strategy

Old-growth timber harvest has changed the composition and spatial patterns of terrestrial wildlife habitats. How the resulting young-growth is managed may influence the future ecological integrity of the landscape at various scales. Changes made to suitable lands designated for development, and to plan components (e.g., standards and guidelines) may affect old-growth habitat for wildlife and the Tongass Conservation Strategy and contributing elements to old-growth reserves (e.g., riparian, beach and estuary habitats).

The Tongass National Forest supports an important assemblage of wildlife many of which are associated with or at least partially dependent on old-growth forest including one of the largest populations of brown bears in the world, high densities of breeding bald eagles, the Alexander Archipelago wolf, species of high importance for subsistence (e.g., Sitka black-tailed deer), an extensive array of endemic mammals, and other species that are dependent on old-growth habitats (e.g., marten and goshawk). The Tongass Old-growth Conservation Strategy is considered important for the continued health of old-growth associated wildlife populations in Southeast Alaska.

Timber harvest, minerals and renewable energy development, and road development can have important effects on the habitat and populations of many of these species and the diversity and integrity of Southeast Alaska ecosystems. Although less than 10 percent of the productive old-growth habitat on the Tongass has been converted to young growth, the percentage is much higher for certain types of old growth, such as lowland and large-tree old growth. In addition, non-NFS old growth has generally been harvested at a much higher rate. Therefore, the consideration of harvest and road building on wildlife in Southeast Alaska are greater than the effects for the Tongass by itself.

Organization of the Document

Organization of EIS and Associated Documents

This DEIS is organized into several chapters and a number of appendices. Chapter 1, “Purpose and Need,” describes the reasons for proposing and completing a plan amendment. Chapter 2, “Alternatives,” describes the process used to develop alternatives, explains the components of a Forest Plan, discusses alternatives not considered in detail, and describes the No-Action Alternative and four action alternatives. Finally, a comparison of these alternatives based on the issues and significant environmental effects is presented.

The discussions of the “Affected Environment” and the “Environmental Consequences” are combined in Chapter 3, “Environment and Effects.” This is done so the environmental consequences (effects) of the alternatives on forest resources, and the background information needed to understand these

consequences, are discussed together for each resource. The focus is on significant effects, with the analysis centered on the public issues. Chapter 3 also begins with a general description of the Tongass National Forest.

The DEIS also includes a list of preparers; a list of agencies, organizations, and persons receiving copies of the document; a bibliography; a glossary; and an index (Chapters 4 through 8). A complete Forest Plan suitability map is provided for each of the alternatives in the Map Packet that accompanies the EIS hard copy. Appendices to the DEIS are contained in a separate volume (DEIS Volume II). They provide more background on planning actions, certain resources and analyses, modeling and analysis techniques, and past and reasonably foreseeable projects.

In addition to the two DEIS volumes, a separate document, called the Proposed Tongass Land and Resource Management Plan (Forest Plan), has been published with this DEIS, to represent the Forest Plan under the Preferred Alternative (Alternative 5) as well as under the other action alternatives.

Additional information, maps, and reference documents used in the Tongass Forest Plan Amendment process are contained in the planning record. Key documents and records are also available on the Forest Plan Amendment Web site (http://www.fs.usda.gov/detail/tongass/landmanagement/?cid=stelprd3801708). These can also be accessed through the main Tongass Web site (www.fs.fed.us/r10/tongass). The complete planning record is on file at the Supervisor's office.

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CHAPTER 2
ALTERNATIVES

Alternatives

Introduction

This chapter describes and compares the alternatives considered for amending the 2008 Tongass Land and Resource Management Plan (Forest Plan). The Forest Service developed five alternatives for detailed analysis, including the No-Action and Proposed Action alternatives, in response to the significant issues. Alternatives are presented in comparative form, sharply defining the differences between each alternative and providing a solid basis for choice among options by the responsible official and the public.

Chapter 2 is divided into four parts:

1. A discussion of how alternatives were developed and of what constitutes an alternative;
2. A discussion of alternatives considered but eliminated from detailed study;
3. A full description of the alternatives that are considered in detail; and
4. A comparison of the alternatives considered in detail.

Color maps showing Land Use Designations (LUDs) and lands suitable for timber production are included in the *Map Folder* of the CD version of the DEIS and in the *Map Packet* accompanying the hard copy version. These maps are also available on the Tongass Planning Web site at www.fs.usda.gov/main/tongass/landmanagement/planning.

Alternative Development Process

What a Forest Plan Includes

Land management planning may be compared to city, county, or borough zoning. Just as areas in a community are zoned as commercial (allowing business uses), industrial (allowing factories), or residential (allowing only homes, schools, etc.), a National Forest is zoned to allow, or not allow, various uses and activities. Land management (forest plan) zoning is done through the use of land use designations (LUDs) that are applied only to National Forest System (NFS) lands on that NFS unit.

Land Use Designations specify ways of managing an area of land and the resources it contains. LUDs may emphasize certain resources (such as remote recreation or old-growth wildlife habitat) or combinations of resources (such as providing for scenic quality in combination with timber harvesting). Each LUD has a detailed *management prescription*, which includes the following elements of Forest Plan management direction: Land Use Designation Standards and Guidelines, Forest-wide Standards and Guidelines, and Plan Components[1].

Each management prescription specifies what is to be considered for site-specific project proposals, and under what conditions. Management prescriptions apply to NFS lands.

[1] Plan components are desired conditions, goals, objectives, suitability of lands, standards, and guidelines as defined in the 2012 Planning Rule.

LUDs are assigned, or allocated, to specified areas of land. Under any one alternative, a given area of land will generally have only one LUD assigned to it; however, the Minerals LUD is an overlapping land allocation and can apply to a given piece of ground when and if a minerals Plan of Operation is approved on that piece of ground. In some other cases, two LUDs may apply to the same area, such as a Wild River LUD within a Wilderness LUD. In these cases, the more restrictive management prescription always applies. Some LUDs, such as Wilderness and LUD II, are congressionally designated and represent permanent allocations.

Forest resource use opportunities, such as timber harvesting or recreation, can be made available in different amounts. What lands to make available for timber harvest or how much of a particular kind of recreation opportunity to provide are questions that land management planning must also address. It is not always possible to provide all resource use opportunities in the amounts desired by everyone. The National Forest Management Act (NFMA) mandates the Forest Service to provide for multiple use and the sustained yield of the products and services obtained from the Forest.

The alternatives themselves are designed around a "framework" that establishes how much emphasis is placed on each of the significant issues or other issues. The DEIS alternatives are directly related to the issues described in Chapter 1. How alternatives were developed to address the issues is discussed below. The *Comparison of Alternatives* section at the end of this chapter also discusses ways in which the alternatives address the issues.

How Alternatives are Described

Each alternative for this DEIS is presented in the same format. This includes the following components:

- **Framework and Expected Outputs.** The basis for alternative design and outputs that are expected in the future under each alternative.
- **Land Use Designations.** The acreages allocated to each Land Use Designation.
- **Management Prescriptions.** Proposed changes to the Forest Plan management direction.
- **Selected Outputs and Measures.** A summary of predicted outputs and measures associated with each alternative.

Land Use Designations

The alternatives are developed using the LUD allocations defined in the 2008 Tongass Forest Plan as the base. This base represents the current Tongass Forest Plan based on decisions made in the 2008 Record of Decision (ROD) and subsequent Forest Plan Amendments made for projects since 2008, and land adjustments in the National Defense Authorization Act for Fiscal Year 2015.[2]

The LUD allocations of the 2008 Tongass Forest Plan define the No-Action Alternative (Alternative 1). The LUD allocations for the action alternatives are similar to the No Action, but incorporate some adjustments. The management prescriptions for each specific LUD under the No Action alternative are the same as under the 2008 Forest Plan (see Chapter 3 of the current Forest Plan, USDA Forest Service 2008a).

[2] Public law No. 113-291, December 19, 2014, 128 Stat. 3729, section 3720(e)(4).

How the 2012 Planning Rule Applies

The proposed plan amendment adds provisions to and modifies provisions of the 2008 Forest Plan. As explained in Chapter 6 of the amended plan, the 2012 Planning Rule requirements for project consistency with plan components apply only to additions and modifications (36 Code of Federal Regulations [CFR] 219.15(d)).

This proposed amendment has met the applicable procedural requirements of the 2012 Planning Rule. That is, the amendment meets section 219.2(b)(3), to consider the best scientific information (219.3), to provide opportunities for public participation and give public notice (219.4, 219.16), to set out direction in the form of plan components (219.7(e)), to amend plans in accordance with a specific process (219.13), to include specific information in a decision document (219.14), to state whether or not projects authorized at the time of amendment may continue without change (219.15), and to provide an objection opportunity (subpart B).

The responsible official has determined that for this amendment only a part of the substantive provisions of 36 CFR 219.11 apply for this amendment. The proposed plan amendment:

1. Identifies specific young-growth stands as suitable for timber production using the provisions of 36 CFR 219.11(a). Such stands include young growth in the beach and estuary fringe, riparian management areas, and in the Old-Growth Habitat LUD.
2. Includes plan components specific to guide young-growth harvest for timber production and other multiple-use purposes using the provision of 36 CFR 219.11(b).
3. Includes plan components specific to guide young-growth harvest for purposes other than timber production including improving or maintaining fish and wildlife habitat using the provision of 36 CFR 219.11(c).
4. Includes plan components specific to guide young-growth harvest to constrain timber harvest consistent with protection of soils, watershed, fish, wildlife, and aesthetic resources using the provisions of 36 CFR 219.11(d). However, the plan amendment does not change the plan direction for old-growth timber harvest.
5. Includes a standard for young-growth harvest before the culmination of mean annual increment to recognize the acreage limitation of subsection (e)(4)(B) of Public Law 113–291, Sec. 3002, subsection (e)(4)(A).

Some people may question this determination of limiting the substantial applicable requirements to section 219.11. However, the responsible official has the discretion to determine whether and how to amend the plan. The responsible official also has discretion to determine the specific changes to propose and approve. The rule provides that "[p]lan amendments may be broad or narrow, depending on the need for change," and that "[t]he responsible official has the discretion to determine whether and how to amend the plan" (36 CFR 219.13(a)). The rule reinforces the principle by providing that the rule "does not compel a change to any existing plan" (36 CFR 219.17 (c)).

Note that the first paragraph of 36 CFR 219.11 states that a plan must meet timber-related requirements "while meeting the requirements of §§ 219.8 through 219.10," and it has been argued that an amendment applying either of these sections would require a transformation of a plan to meet all the substantive requirements of the rule. Clearly, this phrase is intended for new or revised plans; otherwise, a simple, narrow proposal to change a plan developed under the 1982 rule would be impossible.

Future Project Consistency with the Amended Plan

Project consistency with the amended plan is complex. Plan direction that is unchanged by this amendment must be consistent in a different way than new plan direction added by this amendment.

The 2008 Forest Plan standards and guidelines were developed under the 1982 Planning Rule. The 2008 Forest Plan defines a guideline as "a preferred or advisable course of action or level of attainment designed to promote achievement of goals and objectives." Standards were mandatory and guidelines were discretionary in the 2008 Forest Plan. The 1982 planning rule did not provide specific criteria to evaluate consistency of projects or activities with the Plan. For the 2008 Forest Plan, the Forest Service policy is that consistency can only be determined with respect to standards and guidelines, or just standards, because an individual project alone could almost never achieve objectives and desired conditions (77 Federal Register [FR] 21241, April 9, 2012).

The 2012 Planning Rule includes specific requirements for plan components (36 CFR 219 parts 219.8–219.11) and definitions for plan components are very rigid. The 2012 Planning Rule defines a guideline as a constraint on project and activity decisionmaking that allows for departure from its terms, so long as the purpose of the guideline is met. Under the 2012 Planning Rule, standards and guidelines are both mandatory constraints and projects and activities must be consistent with the applicable standards and guidelines. The 2012 Planning Rule also includes consistency provisions at 36 CFR 219.15(d) that apply only to plan components developed under the 2012 Planning Rule. Therefore, any substantial changes to plan direction must be consistent with the 2012 Planning Rule.

To avoid confusion, most changes of plan direction are based on the 2012 Planning Rule and are written as new plan components and are found in Chapter 5 of the proposed Forest Plan. The portions of the 2008 Forest Plan that are not changed, for example Wilderness standards and guidelines, will retain standards (*mandatory*) and guidelines (*optional*) as defined by the 1982 Planning Rule.

Alternative Development

The proposed action (Alternative 2) was developed to maximize or emphasize the percentage of the volume coming from young growth as early as possible, while minimizing any potential effects on the old-growth conservation strategy and other resources, and to make the development of renewable energy resources more permissible in the plan area (see Chapter 1 Purpose and Need). Alternatives to the proposed action were developed in response to the significant issues discussed (see Chapter 1, Issues). Nine alternatives were considered as part of the alternative development process. These include alternatives recommended in scoping comments, other comments, and developed internally by the interdisciplinary team (IDT). Of these, five alternatives were eliminated from detailed study and are discussed in the following section (*Alternatives Eliminated from Detailed Study*). Five alternatives (including the Proposed Action) are considered in detail in this DEIS. They are designed to provide a range of reasonable ways to address the Purpose and Need.

Basic tools used in the development of the alternatives include recent draft timber demand projections (Pacific Northwest Research Station 2015), Tongass GIS databases, and the existing inventory of roadless lands (based on the 2001 Roadless Rule). Maintaining the integrity of the old-growth conservation strategy was also a major consideration in alternative development. Alternative proposals

from other agencies or non-governmental organizations were considered along with alternatives developed internally by the plan amendment IDT.

Alternatives Eliminated from Detailed Study

Develop an Amendment using the 1982 planning Rule procedures

The 2012 Planning Rule gave the discretion to the Agency to amend plans using the 1982 planning rule procedures under 36 CFR 219.17 as well as using the 1982 Planning Regulations. The Agency decided to develop the proposed action using the 2012 Planning regulations to amend the Forest Plan since that will best segue into the next revision of the plan. Since the scope of this amendment is narrow, it is less complicated to address and compare under one set of regulations. Having one or more alternatives that used the 1982 planning regulations would make comparing these alternatives to the alternatives under the 2012 regulations more difficult since some of the plan components have changed or been redefined from the 1982 regulations. Most notably how standards and guidelines are defined and used (see discussion above in Future Project Consistency with the Amended Plan section). Therefore, any alternative that proposed using the 1982 regulations was removed from detailed consideration. The No-action Alternative follows the 1982 regulation in entirety.

Alaska Mental Health Trust Land Exchange

Comments suggested that the proposed Alaska Mental Health Trust Land Exchange be included as an action common to all alternatives in the plan amendment. In determining whether the proposed land exchange fits within the scope of the DEIS, the Forest Service considered three types of actions: connected, similar, and cumulative actions (40 CFR 1508.25).

The proposed land exchange is not a connected action (i.e., an action that is “closely related” to the proposal and alternatives, and provides a basis for evaluating their environmental consequences together). Connected actions automatically trigger other actions, they cannot or will not proceed unless other actions have been taken previously or simultaneously, or they are interdependent parts of a larger action and depend on the larger action for their justification.

The proposed land exchange is not similar to the action being proposed in this plan amendment. For these reasons, the proposed Alaska Mental Health Trust Land Exchange is not analyzed in detail in an alternative.

In terms of being a cumulative action, when viewed with the proposed actions for the plan amendment, the Alaska Mental Health Trust Land Exchange is considered a reasonably foreseeable action and, therefore, is discussed and considered in this DEIS.

State of Alaska Alternative

The State of Alaska proposed an alternative which was modeled and analyzed intensively before removing it from detailed consideration. Similar to Alternative 1 (No Action), no commercial harvest would be allowed in non-development LUDs, Beach and Estuary Fringe, Riparian Management Areas (RMAs), or high-

vulnerability karst. In addition, this alternative would follow the timber sale program adaptive management strategy.

This alternative differs from Alternative 1 in that Timber Production, Modified Landscape, and Scenic Viewshed LUDs would be consolidated into a single LUD and labeled Development LUD. Additionally, timber harvest and road construction would be allowed in 2001 Roadless Rule inventoried roadless areas.

Forest Plan direction for scenery (Scenic integrity objectives [SIOs]) would not be established for areas within the Development LUD so that harvest could occur with fewer constraints that minimize scenery effects. This alternative would include a mitigating factor for scenery and wildlife. The factor limits the amount of area in a large watershed that can be young-growth forest; the total acreage in even-aged stands younger than 150 years would be limited to one-third of the total acreage of forest land within each Value Comparison Unit (VCU). The elimination of the requirement to harvest no earlier than at 95 percent of culmination of mean annual increment (CMAI) (see Alternative 1 description) would not be incorporated into this alternative.

This alternative was modeled using Woodstock (Walters 1993), a forest management linear programming modeling system that accommodates binary search and Monte Carlo simulation, in order to determine how quickly this alternative could transition to a harvest level dominated by young growth. Modeling results indicated that transitioning to a point where about 41 million board feet (MMBF) of young growth and 5 MMBF of old growth could be harvested each year would require just over 30 years. The amount of young-growth timber on lands suitable for timber production in this alternative would be slightly less than in Alternative 1. Removal of the scenery standards would increase young-growth harvest in the early years. Not eliminating the CMAI requirement would decrease young-growth harvest, relative to Alternative 1, which would allow elimination of the CMAI requirement.

This alternative does not meet the purpose and need because it would not transition in 10 or 15 years and, in fact, would not increase the transition speed, relative to Alternative 1. Therefore, this alternative was not carried forward for detailed consideration in the DEIS.

Immediate End to Old-growth Logging

Several scoping comments suggested an alternative that transitions away from old-growth management and into young-growth management immediately. Such an abrupt change would result in substantial adverse effects on the timber industry of Southeast Alaska for two reasons:

1. the abrupt change would make it difficult or impossible for mills to quickly re-tool so they could process young growth; and
2. the availability of economically viable young growth is currently limited and, as a result, the Forest Service would likely offer substantially less timber volume than the projected demand (Table 2-1).

Therefore, this alternative was eliminated from detailed analysis because it does not meet the purpose and need. Specifically, ending old-growth logging immediately would not meet the need for maintaining a viable timber industry that provides jobs and opportunities for Southeast Alaska residents.

Transition to Limited Young-Growth Logging in Five Years

Some comments requested a 5-year transition. In a detailed proposal, a constraint was added that the total initial volume would be 35 MMBF per year and the old-growth portion of that would steadily decrease over five years to a final volume of 3.5 MMBF or less per year. The goal is to increase young-growth volume during this 5-year period to maintain the total volume at 35 MMBF per year. Total volume is not to exceed 35 MMBF per year after the transition and is expected to be made up of 31.5 MMBF of young growth and 3.5 MMBF of old growth. This alternative was modeled using Woodstock and extensively analyzed.

To obtain this volume, the alternative would allow old-growth harvest only in Timber Sale Program Adaptive Management Strategy Phase I lands of the 2008 Forest Plan and outside of inventoried roadless areas. Similarly, young-growth harvest would also be allowed only in Phase I lands and only in Development LUDs outside of inventoried roadless areas; no harvest would be permitted in Beach and Estuary Fringe, RMAs, or in any lands identified as low, medium, or high vulnerability karst. This alternative would allow harvest of stands at ages younger than 95 percent of CMAI. In order to obtain sufficient young-growth volume to transition in 5 years, this alternative harvests stands as young as 55 years of age. As a result, a large number of trees in these stands produce only one log per tree, resulting in higher logging costs and smaller wood producing less revenue. This alternative also prioritizes the young-growth stands that may be harvested to achieve sufficient volume to maintain 35 MMBF per year.

This alternative does not meet the purpose and need for these reasons:

- The phase-down of old growth would result in too rapid of a transition to allow the timber industry time to retool. The purpose and need for this amendment, which relies on the Secretary's July 2013 memo, identifies a 10- to 15-year period for industry to adapt.
- Further, this alternative would not allow the Forest Service sufficient time to offer enough economic old-growth and young-growth volume during the next 10 or more years to maintain the current timber industry (Table 2-1), even if it could adapt that rapidly.
- This alternative is the most restrictive of the alternatives considered in terms of which young-growth stands may be harvested, and even without these restrictions, there is insufficient economic young-growth volume available to produce 31.5 MMBF per year by the end of Year 5.
- Harvesting 55-year-old trees does not appear to be practical or economic in Southeast Alaska. The market for large volumes of young-growth logs has not yet been demonstrated and this is especially true for small logs from 55-year-old stands.
- Recent experience and modeling indicates that the majority of trees in 55-year-old stands will produce only one log per tree. This results in higher logging costs and substantially lower revenues per acre (smaller diameter logs and fewer logs per acre).
- Stands producing only one log per tree, would result in much higher levels of slash (due to the fact that there would be many logs left behind that are almost long enough, but not quite). These slash levels may produce dense slash on the forest floor with negative effects on regeneration, wildlife movement and forage, and/or recreation and scenery.

- Based on current demand projections, a total of 35 MMBF is insufficient to maintain the current industry (Table 2-1).

Therefore, this alternative was eliminated from detailed analysis because it does not meet the purpose and need.

In an attempt to modify this alternative so that it would be economic and meet the purpose and need, the IDT changed its volume requirements to be the same as the alternatives analyzed in detail (i.e., 46 MMBF per year total volume, emphasizing young growth as much as possible, with old growth declining to a maximum of 5 MMBF per year). In addition, the minimum stand ages for harvest were changed to 65 years for high site and 75 years for lower site stands.

After modeling, it was observed that the volumes produced by this modified alternative were similar to the volumes produced by Alternative 4 (see next subsection). Alternative 4 is very similar to this modified alternative in terms of its framework; the primary difference is that Alternative 4 allows commercial thinning in the Beach and Estuary Fringe. This small difference was judged to be insufficient to justify inclusion of an additional alternative so the modified alternative was eliminated from detailed evaluation.

Alternatives Considered in Detail

Table 2-1 displays the projected timber harvest under a baseline and three additional demand scenarios developed for the Tongass National Forest by Daniels (2015). Under these demand scenarios the harvest projection would be 41 MMBF and would increase under all scenarios to maximums ranging from 48 to 76 by 2030. The scenarios are described in detail in the Economic and Social Environment section of this EIS (see Tables 3.22-8 to 3.22-10 and Figures 3.22-7 and 3.22-8 and associated text).

Table 2-1
Projected Timber Harvest on the Tongass under the Baseline Model and Scenarios 1, 2, and 3 (MMBF)

Year	Baseline	Scenario One	Scenario Two	Scenario Three
2015	40.9	40.9	40.9	40.8
2016	41.6	41.6	41.6	41.6
2017	42.3	42.3	43.4	42.5
2018	43.1	43.1	46.3	43.3
2019	43.8	43.8	49.2	44.1
2020	44.5	44.5	52.1	45.0
2021	45.3	45.3	55.1	45.8
2022	46.0	46.0	58.0	46.7
2023	46.7	46.7	60.9	47.5
2024	47.5	47.5	63.8	48.4
2025	48.2	44.0	63.0	45.0
2026	48.9	44.5	65.7	45.6
2027	49.7	45.0	68.4	46.2
2028	50.4	45.5	71.0	46.8
2029	51.1	45.9	73.7	47.4
2030	51.9	46.4	76.4	47.9

In past Forest Plan revisions and amendments, varying demand scenarios were used to develop alternatives, including scenarios that allowed for growth and expansion of the current industry. In this amendment, the purpose and need demands the transition to a predominantly young-growth based industry and the reduction of old-growth harvest. Therefore, examination of alternatives at levels above projected demand is not warranted because these would require expansion of old-growth harvest levels, at least during the next 10 to 20 years. However, over the longer term, expansion of the timber industry is an option as more and more young growth becomes economic to harvest.

Therefore, Alternatives 1 through 5 were designed to correspond with current demand projections and produce a projected timber sale quantity (PTSQ)[3] of about 46 MMBF per year during the next 15 years, with old growth making up a decreasing percentage of the total. Old-growth volume would continue to decrease until it reaches about 5 MMBF per year and it would remain at that level, to support limited small timber operators. As more young growth becomes economic to harvest, the PTSQ would be allowed to increase. In no case, would the harvest level be allowed to exceed the sustained yield limit (SYL) (see Glossary and the *Timber* section of this EIS).

Even though Alternative 1 is the No-Action alternative, it is modeled to follow the same volume production pattern. The Secretary's memo (see Chapter 1) is the current direction and without this amendment, the Tongass would still be transitioning toward young-growth and away from old-growth harvest as rapidly as possible.

Provisions Common to all Alternatives

Under all alternatives, there is flexibility in terms of when young-growth stands may be harvested. Under Public Law 113-291, up to 15,000 acres of young growth may be harvested from 2016 through 2025, in stands less than 95 percent CMAI. This CMAI flexibility may continue after 2025 (with annual maximums); however, the total acreage harvested at less than CMAI cannot exceed 50,000. In addition, young-growth sales under this provision may not be offered unless they represent non-deficit sales.[4] However, there is flexibility in NFMA to allow a continuation of harvesting at younger ages beyond 2025.

Proposed LUD Changes Common to the Action Alternatives

The LUD allocations for each alternative are described in the following alternative-specific descriptions. The LUDs for Alternative 1 (No Action) are different from the LUDs for the action alternatives. The action alternatives are different because of Old-Growth Habitat LUD changes. Under Public Law 113-291, approximately 70,000 acres of NFS land were conveyed to Sealaska and an additional 152,000 acres were converted to LUD II. As a result, Old-Growth Habitat LUDs or Reserves in 16 VCUs were affected. Beginning in February 2015, an interagency team of biologists worked to develop a biologically preferred option for old-growth reserves (OGRs) that meets Forest Plan Appendix K criteria and to document why other proposals are not recommended. In September 2015, they produced this option (see Appendix E) and the Forest Supervisor agreed to incorporate this option into each of the action alternatives. Therefore, the LUD acres vary between Alternative 1 and the action alternatives (Alternatives 2, 3, 4, and 5).

[3] PTSQ is a new term defined in FSH 1909.12, Chapter 60. The term allowable sale quantity is not used with the 2012 planning rule amendments.

[4] Any sale of trees pursuant to the authority granted under subparagraph (A) shall not— (iii) be advertised if the indicated rate is deficit (defined as the value of the timber is not sufficient to cover all logging and stumpage costs and provide a normal profit and risk allowance under the appraisal process of the Forest Service) when appraised using a residual value appraisal.

In addition, the Transportation and Utility Systems overlay LUD would be removed under Alternatives 2, 3, 4, and 5. The LUD management prescription would be replaced by plan components under Alternatives 2, 3, 4, and 5 and would provide management direction for renewable energy and transportation systems corridors (see Chapter 5 in the proposed Forest Plan).

Proposed Forest Plan Changes Common to the Action Alternatives

Under Alternatives 2, 3, 4, and 5, plan components (desired conditions, objectives, suitability of lands, goals, standards and guidelines) for young-growth, renewable energy, and transportation systems corridors, as well as Forest-wide plan components would be included.

The 2008 Forest Plan was developed under the 1982 Planning Rule, but most changes to that Plan are made under the 2012 Planning Rule. All deletions would be done in Chapters 1 to 4 of the proposed Forest Plan, and any substantial changes or additions to the 2008 Forest Plan management direction would be incorporated into Chapter 5 of the proposed Forest Plan. See the proposed Forest Plan document that accompanies this DEIS. The proposed Forest Plan is based on Alternative 5, which is the Preferred Alternative. Similarities and differences between the proposed Forest Plan and the other alternatives are presented in matrix format in Appendix F of this EIS.

Alternative 1 (No Action)

Framework and Expected Outputs

The No Action Alternative represents current management direction (2008 Forest Plan) and includes the application of the Roadless Area Conservation Rule (2001 Roadless Rule) (36 CFR 294 Subpart B). Under this alternative, timber harvest would follow the existing timber sale program adaptive management strategy in all phases outside of inventoried roadless areas (USDA Forest Service 2008c). Timber management would be restricted to the development LUDs and no commercial harvest would be allowed in beach and estuary fringe or RMAs. The 2008 Forest Plan management direction would be followed.

As noted previously, due to Public Law 113-291, CMAI requirements for determining the youngest age for harvest would be eliminated on up to 50,000 acres of young-growth. However, beyond that, the minimum harvest age would return to 95 percent of CMAI except under exemptions provided by the NFMA.

Alternative 1 would result in the largest old-growth harvest among the alternatives over both 25-year and 100-year periods. Table 2-2 summarizes the elements of Alternative 1 and Table 2-3 summarizes the mapped suitable acres in this alternative for young growth and old growth.

This alternative would harvest timber at a rate of 46 MMBF per year (equivalent to the harvest needed to meet the projected timber demand, see Table 2-1). It would emphasize young growth and minimize old growth while maintaining 46 MMBF per year. As such, it is expected to produce about 7 MMBF of young growth and 39 MMBF of old growth per year during the first 10 years (Figure 2-1). From Year 10 through Year 25, it is projected to produce about 10 MMBF of young growth and 36 MMBF of old growth per year. At about Year 33, the young-growth harvest is expected to increase to about 41 MMBF and the old-growth harvest would be decreased to 5 MMBF per year. The young-growth harvest is expected to continue to increase at a rapid rate after Year 33 and is expected to reach an upper limit of about 129 MMBF in about Year 38. The old-growth harvest rate would be held at 5 MMBF per year to support small and micro sales.

Over 80 percent of the Forest would remain in a natural state including inventoried roadless areas. Old-growth conditions would prevail on lands within these roadless areas. Old-growth harvest would continue at a declining rate, compared with current conditions, while young growth harvest would increase as young-growth stands mature and become increasingly economic. A predictable and sustainable supply of forest products would contribute to a limited integrated timber industry in Southeast Alaska for the foreseeable future. A mixture of old growth, recently harvested areas, and various ages of young growth occurs within roaded areas. Recreation, tourism, and subsistence opportunities emphasize natural setting types, although roaded opportunities expand slightly from current conditions due to construction of additional roads outside of inventoried roadless areas.

Table 2-2
Key Elements of Alternative 1

Old-growth Harvest
• Follows 2008 Forest Plan Timber Sale Program Adaptive Management Strategy for Phases 1, 2, and 3
• No harvest allowed in Inventoried Roadless Areas
Young-growth Harvest
• Allows harvest in Development LUDs, including Clearcutting
• Allows no harvest in Non-Development LUDs
• Allows no harvest in Inventoried Roadless Areas
• Allows no commercial harvest in Beach and Estuary Fringe or in RMAs
• There is flexibility to harvest 50,000 acres at a younger age than 95% of CMAI per Public Law 113-291
• Scenery standards (SIOs) would not be modified for young growth
LUD Changes
• None
Other New Plan Components (Chapter 5)
• None

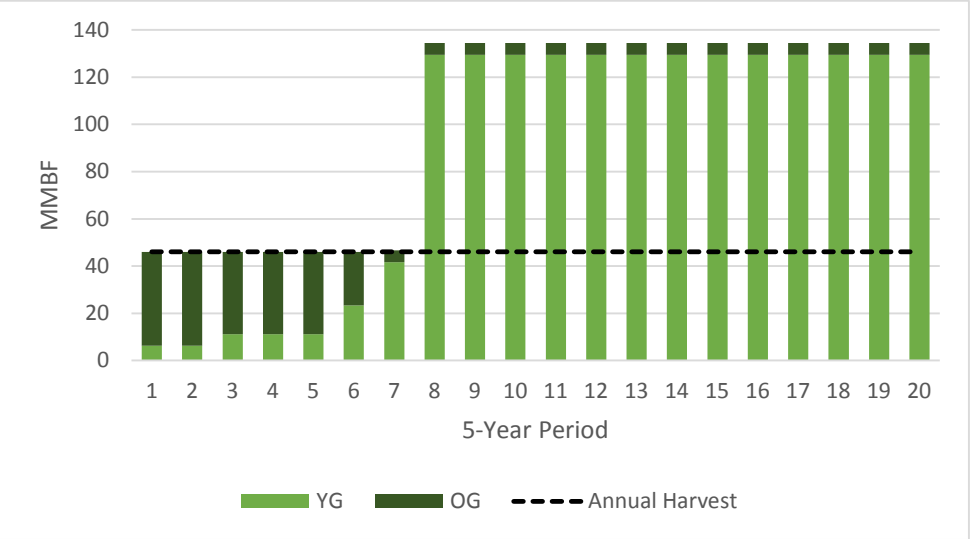
Land Use Designations

If Alternative 1 is selected, the LUD allocation acres and the suitable acres shown in Table 2-3 would result. Figure 2-2 shows the distribution of LUDs across the Tongass under Alternative 1 according to four LUD groups (see Table 2-3 for definitions of the LUD groups). Color maps showing LUDs and lands suitable for timber production for Alternative 1 are included in the *Map Folder* of the CD version of the DEIS and in the *Map Packet* accompanying the DEIS hard copy.

Management Prescriptions

Under Alternative 1, the management prescriptions identified in the 2008 Forest Plan would continue to be in effect. These represent the 2008 Land and Resource Management Plan (USDA Forest Service 2008a).

Figure 2-1
Projected Timber Sale Quantity (average annual harvest) over 100 Years in 5-Year Periods under Alternative 1 showing Volume (MMBF) contributed by Old-Growth (OG) and Young-Growth (YG)



Selected Outputs

Table 2-4 displays selected outputs and other measures associated with this alternative.

Table 2-3
Land Use Designation, Suitable, and Projected Harvest Acres for Alternative 1[1]

Land Use Designation Group	Acres Allocated
Wilderness LUD Group[2]	5,908,217
Natural Setting LUD Group – No YG Harvest [3]	7,448,628
Natural Setting LUD Group – With YG Harvest [4]	0
Development LUD Group[5]	3,362,707
Total National Forest System lands	16,719,552
Suitable Acres	**Acres Allocated**
Suitable Acres-Old Growth	316,417
Suitable Acres-Young Growth	250,771
Projected Harvest	**Acres Allocated**
Projected Harvest Acres during first 25 Years	
Old Growth	40,140
Young Growth	7,271
Projected Harvest Acres during first 100 Years	
Old Growth	62,413
Young Growth	201,003

1 When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for the Transportation and Utility Systems LUD because it is a series of corridors with undefined width and imprecise locations. Totals may not exactly equal the sum of individual entries due to rounding.

2 Includes Wilderness and National Monument LUDs.

3 Includes all Natural Setting LUDs: LUD II, Research Natural Area, Municipal Watershed, Wild, Scenic, and Recreational River, Old Growth Habitat, Special Interest Area, Remote Recreation, and Semi-Remote Recreation LUDs.

4 No LUDs meet these criteria.

5 Includes Timber Production, Modified Landscape and Scenic Viewshed LUDs. Experimental Forest is also included, even though lands are not suitable for timber production.

Figure 2-2
Wilderness, Natural Setting (with and without Young Growth Harvest), and Development LUDs on the Tongass National Forest under Alternative 1

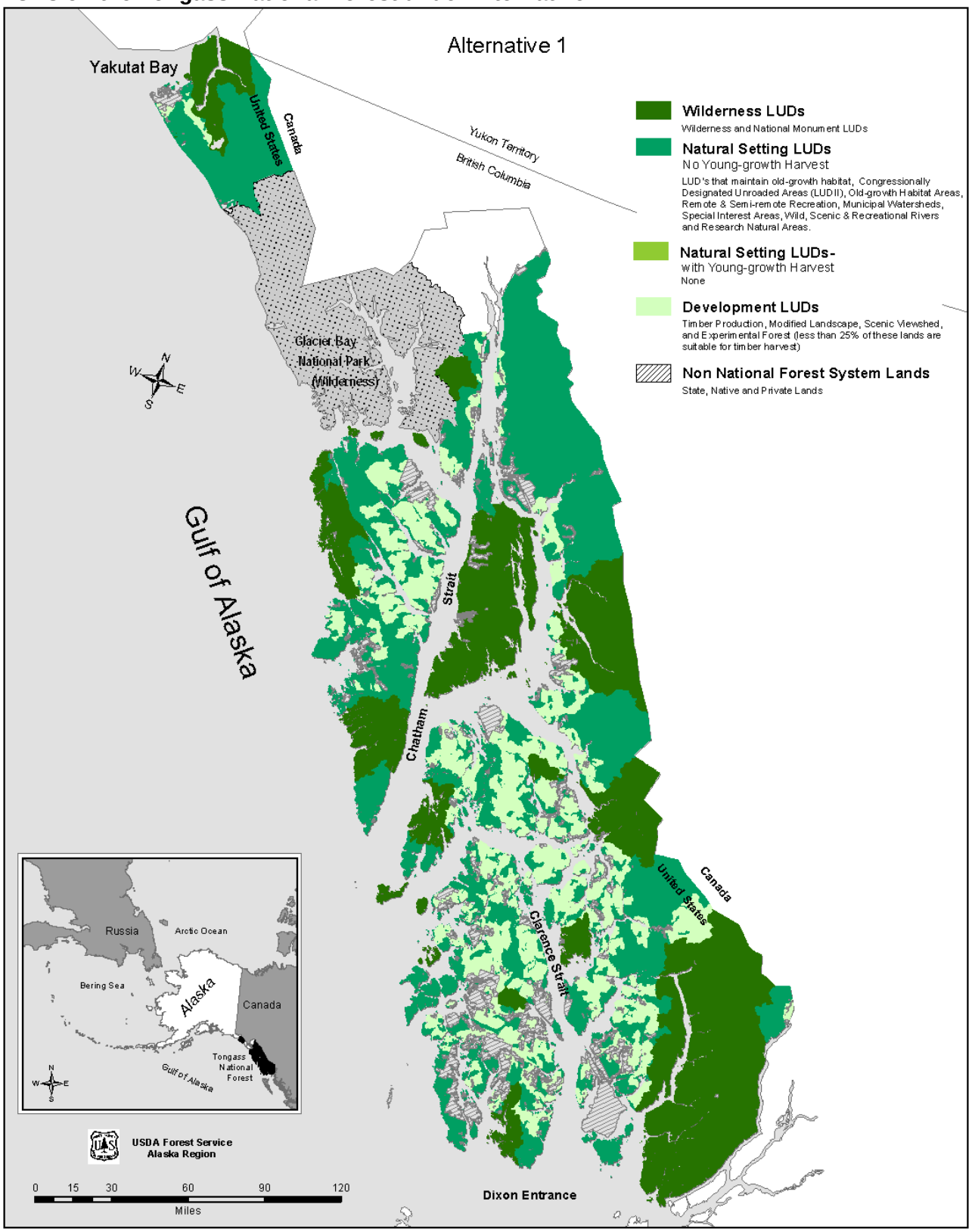


Table 2-4
Selected Outputs and Measures Associated with Alternative 1[1]

Resource/Category	Output/Measure
Percent in Wilderness LUD Group	35%
Percent in Natural Setting LUD Group with No YG Harvest	45%
Percent in Natural Setting LUD Group with YG Harvest	0%
Percent in Development LUD Group	20%
Suitable Area for Timber Management in Inventoried Roadless Areas – Old Growth and Young Growth (acres)	0.0
Percent of Existing Productive Old Growth Harvested after 100 years	1.2%
Percent of Original (1954) Productive Old Growth remaining after 100 Years (92% in 2015)	90%
Estimated Forest Land Suitable for Timber Production–Old Growth (acres)	316,417
Estimated Forest Land Suitable for Timber Production–Young Growth (acres)	250,771
Long-term Projected Timber Sale Quantity (PTSQ)[2] in MMBF	134
Years until maximum PTSQ is achieved	38
Years until full transition is achieved (i.e., 41 MMBF of Young Growth is harvested)	32
Maximum New Road Construction after 100 Years (miles)	919
Maximum Road Construction on Decommissioned Road Grades after 100 Years (miles)	413
Maximum New Road Reconstruction after 100 Years (miles)	896

[1] Totals may not add exactly due to rounding.
[2] PTSQ volumes expressed as annual averages volumes.

Alternative 2 (Proposed Action)

Framework and Expected Outputs

As in Alternative 1, this alternative would follow the existing timber sale program adaptive management strategy in all phases for old-growth harvest. However, the portions of inventoried roadless areas (IRAs) that were roaded before the 2001 Roadless Rule and during the 2001 Roadless Rule exemption period for the Tongass would be available for young-growth and old-growth harvest. This would require rulemaking to modify 36 CFR 294.13(b)(4). If selected, no harvest could occur in IRAs until rulemaking is completed.

Alternative 2 would differ substantially from Alternative 1 in terms of young-growth harvest. Young-growth management would be allowed in both development and non-development LUDs (except for Congressionally designated and administratively withdrawn areas, such as Wilderness, and islands less than 1,000 acres in size), in beach and estuary fringe, RMAs outside of Tongass Timber Reform Act (TTRA) buffers, and high-vulnerability karst. No harvest would occur in IRAs that have not been roaded. However, the portions of IRAs that were roaded before the 2001 Roadless Rule and during the 2001 Roadless Rule exemption period for the Tongass would be available for young-growth and old-growth harvest after rulemaking.

Young-growth management may include clearcutting in all areas, except in RMAs and on high-vulnerability karst, where only commercial thinning (up to 33 percent basal area removal) would be allowed. After 15 years, clearcutting would no longer be allowed in the beach and estuary fringe; only commercial thinning would be allowed. In addition, scenery standards for young-growth management would be relaxed; SIOs would be Very Low for all LUDs and distance zones.

As noted previously, due to Public Law 113-291, CMAI requirements for determining the youngest age for harvest would be eliminated on up to 50,000 acres of young-growth. Beyond that, the minimum harvest age would continue to be flexible under exceptions allowed by NFMA.

The Forest Plan would include new management direction that improves flexibility in renewable energy development under this alternative.

Among the action alternatives, Alternative 2 would provide the largest amount of timber volume (old growth and young growth combined), including the largest amount of young-growth volume from lands suitable for timber production. It would result in the smallest amount of old growth timber volume over both 25-year and 100-year periods. Table 2-5 summarizes the elements of Alternative 2 and Table 2-6 summarizes the mapped suitable acres in this alternative for young growth and old growth.

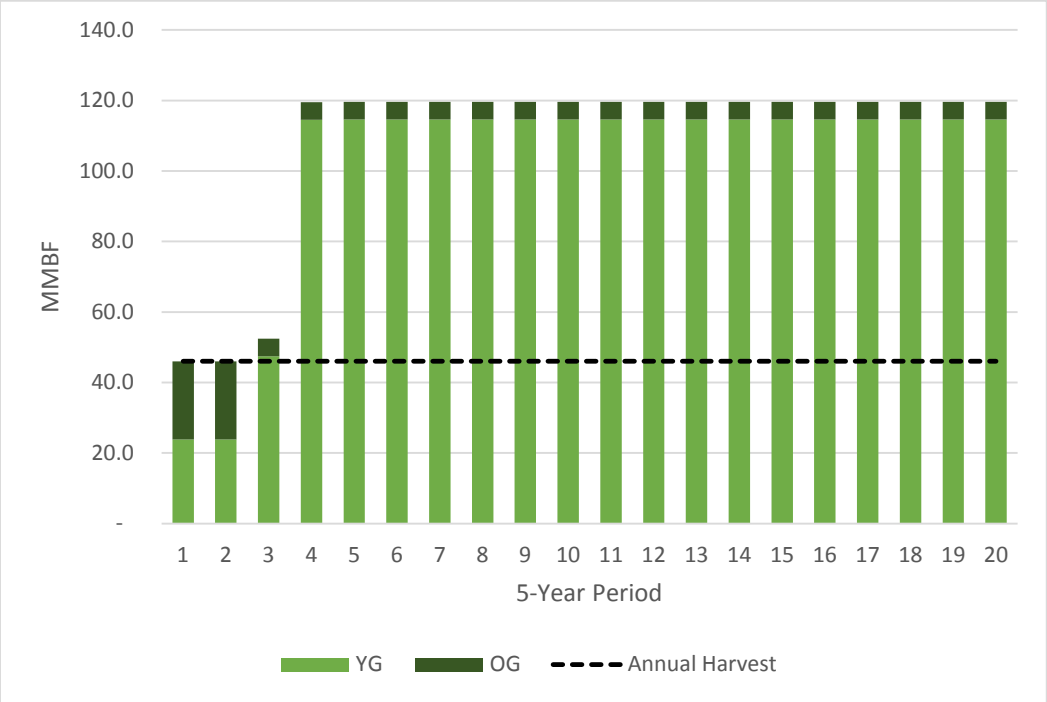
This alternative would harvest timber at a rate of 46 MMBF per year (equivalent to the harvest needed to meet the projected timber demand, see Table 2-1), emphasizing young growth and minimizing old growth. As such, it is expected to produce an average of about 24 MMBF of young growth and 22 MMBF of old growth per year during the first 10 years (Figure 2-3). From Years 11 through 15, Alternative 2 is projected to produce an average of 47 MMBF of young growth and 5 MMBF of old growth per year. Alternative 2 would likely reach a full transition harvest of 41 MMBF of young growth about Year 12. Young-growth harvest is expected to continue to increase at a rapid rate after Year 12 and is expected to reach an upper limit of about 115 MMBF in Year 18. The old-growth harvest rate would be held at 5 MMBF per year to support small and micro sales.

Over 80 percent of the Forest would remain in a natural state. The portions of the IRAs that were roaded before the 2001 Roadless Rule and during the 2001 Roadless Rule exemption period for the Tongass would be available for harvest after rulemaking. Old-growth conditions would prevail on forest lands within IRAs that have not been roaded. Young-growth harvest would be increasingly emphasized during the transition period while the existing timber industry is maintained and given the opportunity to transition to a predominantly young-growth based industry over the next 10 to 15 years. Following the transition period, the young-growth based timber industry would have the potential for substantial growth as more young-growth stands become economic to harvest. Young growth may be harvested by clearcutting and other prescriptions in natural setting LUDs and beach and estuary fringe, but only commercial thinning (33 percent basal area removal) would occur in RMAs outside of TTRA buffers. A small old-growth based industry would continue after transition with an annual volume of about 5 MMBF being offered through the small and micro sale programs. A mixture of old growth, recently harvested areas, and various ages of young growth would occur within the roaded IRAs. Recreation, tourism, and subsistence opportunities would continue to emphasize natural setting types, although some additional roaded opportunities would be developed. Scenery impacts would occur in some sensitive areas because scenery standards for young growth harvest would be very low.

Land Use Designations

If Alternative 2 is selected, the LUD allocation acres and the suitable acres shown in Table 2-6 would result. Figure 2-4 shows the distribution of LUDs across the Tongass under Alternative 2 according to four LUD groups (see Table 2-6 for definitions of the LUD groups). Color maps showing both LUDs and lands suitable for timber production for Alternative 2 are included in the *Map Folder* of the CD version of the DEIS and in the *Map Packet* accompanying the DEIS hard copy.

Figure 2-3
Projected Timber Sale Quantity (average annual harvest) over 100 Years in 5-Year Periods under Alternative 2 showing Volume (MMBF) contributed by Old-Growth (OG) and Young-Growth (YG)



Management Prescriptions

The proposed Forest Plan that accompanies this EIS represents the Forest Plan if Alternative 5 (Preferred Alternative) were to be selected. Many of the changes reflected in the proposed Forest Plan are consistent with Alternative 2, but some are not. The similarities and differences among the alternatives, with respect to the proposed Forest Plan, are detailed in Appendix F to this EIS.

Selected Outputs

Table 2-7 displays selected outputs and other measures associated with this alternative.

Table 2-5
Key Elements of Alternative 2

Old-growth Harvest
• Follows 2008 Timber Sale Program Adaptive Management Strategy for Phases 1, 2, and 3 • The portions of IRAs that were previously roaded would be available for harvest after rulemaking.
Young-growth Harvest
• Allows harvest in Development LUDs, including clearcutting, and entry into all phases of the Timber Sale Program Adaptive Management Strategy without regard to harvest levels • Allows harvest in Non-development LUDs, except for Congressionally designated and administratively withdrawn areas and islands < 1,000 ac • The portions of IRAs that were previously roaded would be available for harvest after the Roadless Rule changes or the Tongass Roadless Rule Exemption is reinstated. • Commercial harvest is allowed in Beach and Estuary Fringe, in high-vulnerability karst, and in RMAs outside of TTRA buffers. • Clearcutting is allowed on all lands suitable for timber production, except RMAs and high-vulnerability karst where only commercial thinning is allowed. The maximum removal in RMAs outside of TTRA buffers is 33 percent. Clearcutting in Beach and Estuary Fringe is not allowed after 15 years (basal area). • There is flexibility to harvest at a younger age than 95 percent of CMAI throughout the life of the Plan. • Scenery standards would be relaxed to Very Low SIO for young growth harvest
LUD Changes
• Old Growth Habitat LUDs were modified to correspond with the biologically preferred alternative in areas where they were negatively affected by land conveyances and other changes resulting from Public Law 113-291. • The Transportation and Utility Systems overlay LUD is removed.
New Plan Components (Chapter 5)
• Young-growth plan components added to Forest Plan. • Renewable Energy plan components added to Forest Plan. • Transportation Systems Corridors plan components added to Forest Plan.

Table 2-6
Land Use Designation, Suitable, and Projected Harvest Acres for Alternative 2[1]

Land Use Designation Group	Acres Allocated
Wilderness LUD Group[2]	5,908,217
Natural Setting LUD Group – No YG Harvest [3]	996,700
Natural Setting LUD Group – With YG Harvest [4]	6,459,313
Development LUD Group[5]	3,355,323
Total National Forest System lands	16,719,552
Suitable Acres	**Acres Allocated**
Suitable Acres-Old Growth	337,373
Suitable Acres-Young Growth	369,671
Projected Harvest	**Acres Allocated**
Projected Harvest Acres after 25 Years	
Old Growth	12,927
Young Growth	69,362
Projected Harvest Acres after 100 Years	
Old Growth	30,017
Young Growth	330,517

[1] When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated Renewable Energy and Transportation Systems because the projects are an undefined width and imprecise locations and not all renewable energy sites are known. Totals may not exactly equal the sum of individual entries due to rounding.

[2] Includes Wilderness and National Monument LUDs.

[3] Includes the following Natural Setting LUDs: LUD II, Research Natural Area, Enacted Municipal Watershed, and Wild River

[4] Includes the following Natural Setting LUDs: Scenic, and Recreational River, Old Growth Habitat, Special Interest Area, Remote Recreation, and Semi-Remote Recreation LUDs.

[5] Includes Timber Production, Modified Landscape, and Scenic Viewshed LUDs. Experimental Forest is also included, even though it is technically not a Development LUD.

Figure 2-4
Wilderness, Natural Setting (with and without Young Growth Harvest), and Development LUDs on the Tongass National Forest under Alternative 2

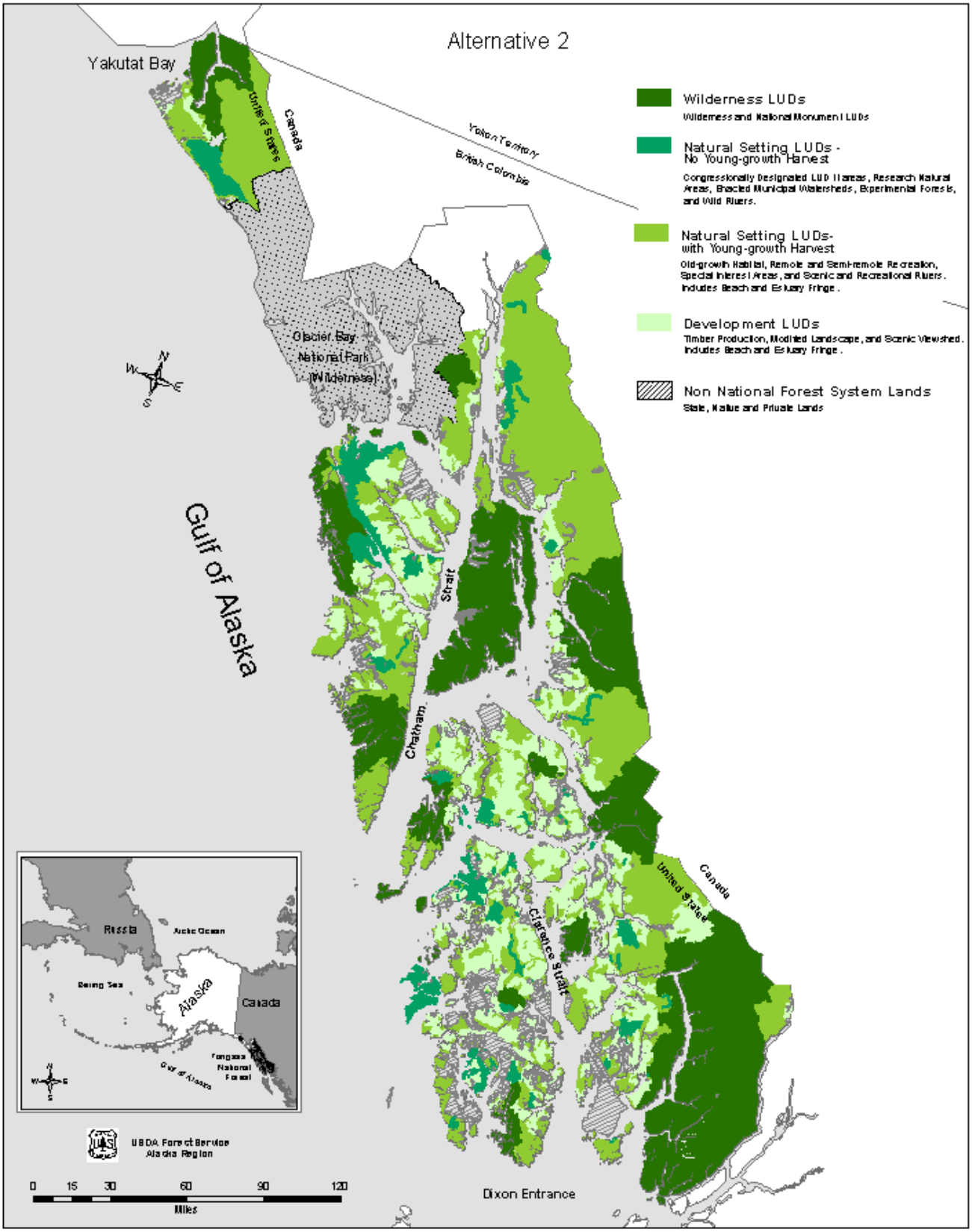


Table 2-7
Selected Outputs and Measures Associated with Alternative 2[1]

Resource/Category	Output/Measure
Percent in Wilderness LUD Group	35%
Percent in Natural Setting LUD Group with No YG Harvest	6%
Percent in Natural Setting LUD Group with YG Harvest	39%
Percent in Development LUD Group	20%
Suitable Area for Timber Management in Inventoried Roadless Areas – Old growth and Young Growth (acres)	33,200
Percent of Productive Old Growth Harvested after 100 years	0.6%
Percent of Original Productive Old Growth remaining after 100 Years (92% in 2015)	91%
Estimated Forest Land Suitable for Timber Production–Old Growth (acres)	337,373
Estimated Forest Land Suitable for Timber Production–Young Growth (acres)	369,671
Long-term Projected Timber Sale Quantity (PTSQ)[2] in MMBF	120
Years until maximum PTSQ is achieved	18
Years until full transition is achieved (i.e., 41 MMBF of Young Growth is harvested)	12
Maximum New Road Construction after 100 Years (miles)	1,026
Maximum Road Construction on Decommissioned Road Grades after 100 Years (miles)	588
Maximum New Road Reconstruction after 100 Years (miles)	1,231

[1] Totals may not add exactly due to rounding.
[2] PTSQ volumes expressed as annual averages and include sawlog plus utility.

Alternative 3

Framework and Expected Outcomes

Alternative 3 would allow old-growth harvest only in Phase 1 of the existing timber sale program adaptive management strategy (USDA Forest Service 2008c) but would allow young-growth harvest in all phases. This alternative would allow young-growth and old-growth harvest in 2001 Roadless Rule IRAs. If this alternative were selected, harvest in IRAs would be deferred until the Roadless Rule changes or the Tongass Roadless Rule Exemption is reinstated.

Alternative 3 is similar to Alternative 2 in that it identifies lands as suitable for young-growth timber production in both development and natural setting LUDs (except for Congressionally designated areas such as Wilderness, and administratively withdrawn areas and islands less than 1,000 acres in size), as well as in beach and estuary fringe and high-vulnerability karst, but not in RMAs. Young-growth management may include clearcutting in all areas, except in beach and estuary fringe and on high-vulnerability karst, where only commercial thinning is allowed. In addition, scenery standards (SIOs) for young growth management would be reduced by one level relative to the 2008 Forest Plan (i.e., High is reduced to Moderate, Moderate is reduced to Low, and Low and Very Low become Very Low).

As noted previously, due to Public Law 113-291, CMAI requirements for determining the youngest age for harvest would be eliminated on up to 50,000 acres of young growth. Beyond that, the minimum harvest age would continue to be flexible under exceptions allowed by NFMA.

The Forest Plan would include new management direction that improves flexibility in renewable energy development under this alternative.

Among the action alternatives, Alternative 3 would provide the second largest amount of timber volume (old growth and young growth combined). It would result

in the second lowest harvest of old growth over both the 25-year and 100-year periods. Table 2-8 summarizes the unique components of Alternative 3 and Table 2-9 summarizes the mapped suitable acres in this alternative for young growth and old growth.

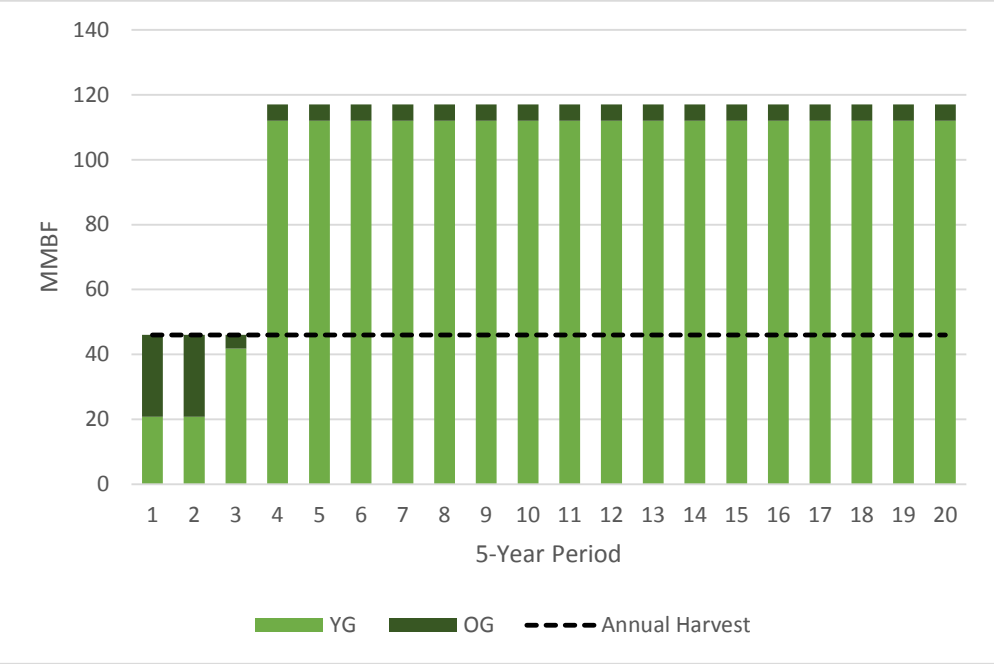
This alternative would harvest timber at a rate of 46 MMBF per year (equivalent to the harvest needed to meet the projected timber demand, see Table 2-1). It would emphasize young growth and minimize old growth while maintaining 46 MMBF per year. As such, it is expected to produce an average of about 21 MMBF of young growth and 25 MMBF of old growth per year during the first 10 years (Figure 2-5). From Year 11 through Year 15, it is projected to produce an average of 42 MMBF of young growth and about 5 MMBF of old growth per year. Alternative 3 would likely reach a full transition harvest of 41 MMBF of young growth at about Year 13. Young-growth harvest is expected to continue to increase at a rapid rate after Year 13 and is expected to reach an upper limit of about 117 MMBF in Year 18. The old-growth harvest rate would be held at 5 MMBF per year to support small and micro sales.

Over 80 percent of the Forest would remain in a natural state. Old-growth conditions would prevail on forest lands within the IRAs. Young-growth harvest would be increasingly emphasized during a transition period and the existing timber industry maintained and given the opportunity to transition to a dominantly young-growth based industry over the next 10 to 15 years. Following the transition period, the young-growth based timber industry would have the potential for substantial growth as more young-growth stands become economic to harvest. Young growth would be harvested by clearcutting and other prescriptions in non-development LUDs, but only commercial thinning would occur in beach and estuary fringe. A small old-growth based industry would continue after transition with an annual volume of about 5 MMBF being offered through the small and micro sale programs. A mixture of old growth, recently harvested areas, and various ages of young growth would occur within roaded areas. Recreation, tourism, and subsistence opportunities would continue to emphasize natural setting types, although some additional roaded opportunities would be developed. Limited scenery impacts would occur in some sensitive areas because scenery standards for young growth harvest would be reduced by one level compared with the current Forest Plan.

Land Use Designations

If Alternative 3 is selected, the LUD allocation acres and the suitable acres shown in Table 2-9 would result. Figure 2-6 shows the distribution of LUDs across the Tongass under Alternative 3 according to four LUD groups (see Table 2-9 for definitions of the LUD groups). Color maps showing both LUDs and lands suitable for timber production for Alternative 3 are included in the *Map Folder* of the CD version of the DEIS and in the *Map Packet* accompanying the DEIS hard copy.

Figure 2-5
Projected Timber Sale Quantity (average annual harvest) over 100 Years in 5-Year Periods under Alternative 3 showing Volume (MMBF) contributed by Old Growth (OG) and Young Growth (YG)



Management Prescriptions

The proposed Forest Plan that accompanies this EIS represents the Forest Plan if Alternative 5 (Preferred Alternative) were to be selected. Many of the changes reflected in the proposed Forest Plan are consistent with Alternative 3, but some are not. The similarities and differences among the alternatives, with respect to the proposed Forest Plan, are detailed in Appendix F to this EIS.

Selected Outputs

Table 2-10 displays selected outputs and other measures associated with this alternative.

Table 2-8
Key Components of Alternative 3

Old-growth Harvest
• Follows 2008 Timber Sale Program Adaptive Management Strategy for Phase 1 only • Inventoried Roadless Areas (IRAs) would be available for harvest after the Roadless Rule changes or the Tongass Roadless Rule Exemption is reinstated.
Young-growth Harvest
• Allows harvest in Development Land Use Designations (LUDs), including clearcutting, and entry into all phases of the Timber Sale Program Adaptive Management Strategy without regard to harvest levels. • Allows harvest in Non-development LUDs, except for congressionally designated and administratively withdrawn areas and islands smaller than 1,000 acres. • IRAs would be available for harvest after the Roadless Rule changes or the Tongass Roadless Rule Exemption is reinstated. • Commercial harvest is allowed in Beach and Estuary Fringe but not in RMAs. • Clearcutting is allowed in all areas except Beach and Estuary Fringe and high-vulnerability karst, where only Commercial Thinning is allowed. • There is flexibility to harvest at a younger age than 95 percent of CMAI throughout the life of the Plan. • Scenery standards for young growth management would be relaxed; SIOs would be reduced by one level relative to the 2008 Forest Plan (i.e., High is reduced to Moderate, Moderate is reduced to Low, and Low and Very Low become Very Low).
LUD Changes
• Old-Growth Habitat LUDs were modified to correspond with the biologically preferred alternative in areas where they were negatively affected by land conveyances and other changes resulting from Public Law 113-291. • The Transportation and Utility Systems overlay LUD is removed.
New Plan Components (Chapter 5)
• Young-growth plan components added to Forest Plan. • Renewable Energy plan components added to Forest Plan. • Transportation Systems Corridors plan components added to Forest Plan.

Table 2-9
Land Use Designation, Suitable, and Projected Harvest Acres for Alternative 3[1]

Land Use Designation Group	Acres Allocated
Wilderness LUD Group[2]	5,908,217
Natural Setting LUD Group – No YG Harvest [3]	996,700
Natural Setting LUD Group – With YG Harvest [4]	6,459,313
Development LUD Group[5]	3,355,323
Total National Forest System lands	16,719,552
Suitable Acres	**Acres Allocated**
Suitable Acres-Old Growth	497,831
Suitable Acres-Young Growth	330,969
Projected Harvest	**Acres Allocated**
Projected Harvest Acres after 25 Years	
Old Growth	13,856
Young Growth	52,094
Projected Harvest Acres after 100 Years	
Old Growth	31,198
Young Growth	304,792

[1] When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for Renewable Energy and Transportation Systems because transportation projects are a series of corridors with undefined width and imprecise locations and not all renewable energy sites are known. Totals may not exactly equal the sum of individual entries due to rounding.

[2] Includes Wilderness and National Monument LUDs.

[3] Includes the following Natural Setting LUDs: LUD II, Research Natural Area, Enacted Municipal Watershed, and Wild River

[4] Includes the following Natural Setting LUDs: Scenic, and Recreational River, Old Growth Habitat, Special Interest Area, Remote Recreation, and Semi-Remote Recreation LUDs.

[5] Includes Timber Production, Modified Landscape, and Scenic Viewshed LUDs. Experimental Forest is also included, even though it is technically not a Development LUD.

Figure 2-6
Wilderness, Natural Setting (with and without Young Growth Harvest), and Development LUDs on the Tongass National Forest under Alternative 3

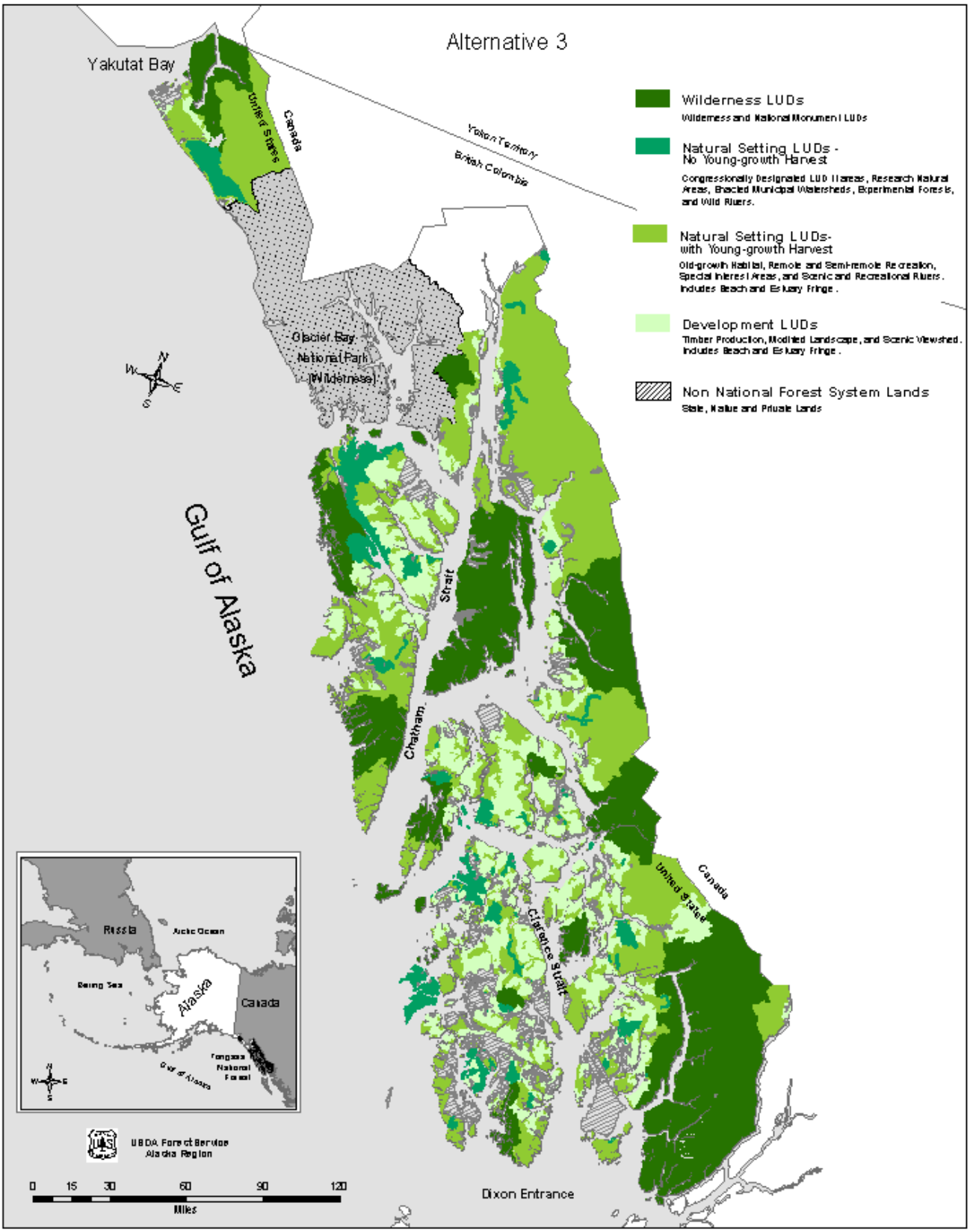


Table 2-10
Selected Outputs and Measures Associated with Alternative 3[1]

Resource/Category	Output/Measure
Percent in Wilderness LUD Group	35%
Percent in Natural Setting LUD Group with No YG Harvest	6%
Percent in Natural Setting LUD Group with YG Harvest	39%
Percent in Development LUD Group	20%
Suitable Area for Timber Management in Inventoried Roadless Areas – Old growth and Young Growth (acres)	250,900
Percent of Existing Productive Old Growth Harvested after 100 years	0.6%
Percent of Original Productive Old Growth remaining after 100 Years (92% in 2015)	91%
Estimated Forest Land Suitable for Timber Production–Old Growth (acres)	497,831
Estimated Forest Land Suitable for Timber Production–Young Growth (acres)	330,969
Long-term Projected Timber Sale Quantity (PTSQ)[2] in MMBF	117
Years until maximum PTSQ is achieved	18
Years until full transition is achieved (i.e., 41 MMBF of Young Growth is harvested)	13
Maximum New Road Construction after 100 Years (miles)	970
Maximum Road Construction on Decommissioned Road Grades after 100 Years (miles)	547
Maximum New Road Reconstruction after 100 Years (miles)	1,147

[1] Totals may not add exactly due to rounding.
[2] PTSQ volumes expressed as annual averages volumes.

Alternative 4

Framework and Expected Outcomes

Like Alternative 3, this alternative would allow old-growth harvest only in Phase 1 of the existing timber sale program adaptive management strategy. Similar to Alternative 1, this alternative includes the application of the 2001 Roadless Rule.

Alternative 4 would allow young-growth management only in the development LUDs. Harvest is allowed in beach and estuary fringe and on high-vulnerability karst, but only commercial thinning is allowed. No harvest is allowed in RMAs. Young growth management may include clearcutting in other areas. No change would occur in scenery standards relative to the 2008 Forest Plan.

As noted previously, due to Public Law 113-291, CMAI requirements for determining the youngest age for harvest would be eliminated on up to 50,000 acres of young-growth. Beyond that, the minimum harvest age would continue to be flexible under exceptions allowed by NFMA.

The Forest Plan would include new management direction that improves flexibility in renewable energy development under this alternative.

Among the action alternatives, Alternative 4 would provide the lowest amount of timber volume (old growth and young growth combined) and the smallest amounts of young-growth volume in the suitable base. It would result in the second highest harvest of old growth during both the 25-year and 100-year periods. Table 2-11 summarizes the unique components of Alternative 4, and Table 2-12 summarizes the mapped suitable acres in this alternative for young growth and old growth.

This alternative would harvest timber at a rate of 46 MMBF per year (equivalent to the harvest needed to meet the projected timber demand, see Table 2-1). It would emphasize young growth and minimize old growth while maintaining 46 MMBF per year. As such, it is expected to produce an average of about 9 MMBF of young

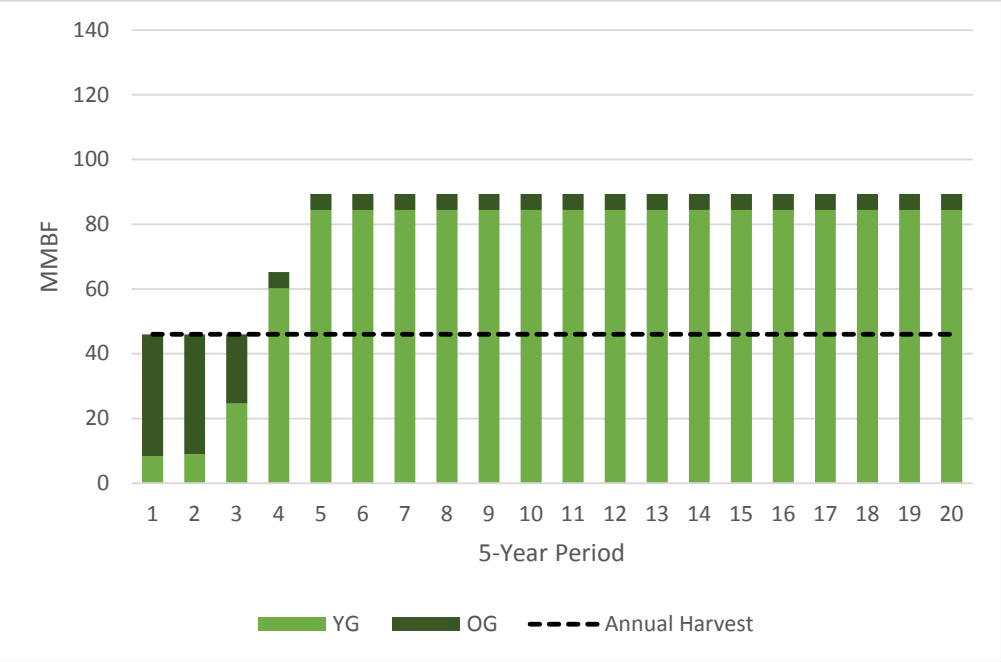
growth and 37 MMBF of old growth per year during the first 10 years (Figure 2-7). From Year 11 through Year 15, it is projected to produce an average of 25 MMBF of young growth and about 21 MMBF of old growth per year. Alternative 4 would likely reach a full transition harvest of 41 MMBF of young growth about Year 16. Young-growth harvest is expected to continue to increase at a rapid rate after Year 16 and is expected to reach an upper limit of 84 MMBF about Year 23. The old-growth harvest rate would be held at 5 MMBF per year to support small and micro sales.

Over 80 percent of the Forest would remain in a natural state, including the 2001 Roadless Rule IRAs. Old-growth conditions would prevail on forest lands within the IRAs. Young-growth harvest would be increasingly emphasized during a transition period as the existing timber industry is maintained and given the opportunity to transition to a predominantly young-growth based industry over the next 10 to 15 years. Following the transition period, the young-growth based timber industry would have the potential for substantial growth as more young-growth stands become economic to harvest. Young growth would be harvested only by commercial thinning in beach and estuary fringe and on high-vulnerability karst. A small old-growth based industry would continue after transition with an annual volume of about 5 MMBF being offered through the small and micro sale programs. A mixture of old growth, recently harvested areas, and various ages of young growth would occur within IRAs. Recreation, tourism, and subsistence opportunities would continue to emphasize natural setting types, although some additional roaded opportunities would be developed. Effects on scenery would be similar to those permitted by the current Forest Plan.

Land Use Designations

If Alternative 4 is selected, the LUD allocation acres and the suitable acres shown in Table 2-12 would result. Figure 2-8 shows the distribution of LUDs across the Tongass under Alternative 4 according to four LUD groups (see Table 2-12 for definitions of the LUD groups). Color maps showing both LUDs and lands suitable for timber production for Alternative 4 are included in the *Map Folder* of the CD version of the DEIS and in the *Map Packet* accompanying the DEIS hard copy.

Figure 2-7
Projected Timber Sale Quantity (average annual harvest) over 100 Years in 5-Year Periods under Alternative 4 showing Volume (MMBF) contributed by Old Growth (OG) and Young Growth (YG)



Management Prescriptions

The proposed Forest Plan that accompanies this DEIS represents the Forest Plan if Alternative 5 (Preferred Alternative) were to be selected. Many of the changes reflected in the proposed Forest Plan are consistent with Alternative 4, but some are not. The similarities and differences among the alternatives, with respect to the proposed Forest Plan, are detailed in Appendix F to this DEIS.

Selected Outputs

Table 2-13 displays selected outputs and other measures associated with this alternative.

Table 2-11
Key Components of Alternative 4

Old-growth Harvest
• Follows 2008 Timber Sale Program Adaptive Management Strategy for Phase 1 only • No harvest is allowed in Inventoried Roadless Areas (IRAs).
Young-growth Harvest
• Allows harvest in Development Land Use Designations (LUDs), including clearcutting, but allows entry only in Phase 1 of the Timber Sale Program Adaptive Management Strategy. • Allows no harvest in Non-development LUDs. • Allows no harvest in IRAs. • Commercial harvest is allowed in Beach and Estuary Fringe and in high-vulnerability karst within Development LUDs, but no harvest is allowed in RMAs. • Clearcutting is not allowed in Beach and Estuary Fringe and high-vulnerability karst; only commercial thinning is allowed. • There is flexibility to harvest before 95 percent of CMAI throughout the life of the Plan. • No change would occur in scenery standards relative to the 2008 Forest Plan.
LUD Changes
• Old-Growth Habitat LUDs were modified to correspond with the biologically preferred alternative in areas where they were negatively affected by land conveyances and other changes resulting from Public Law 113-291. • The Transportation and Utility Systems overlay LUD is removed.
New Plan Components (Chapter 5)
• Young-growth plan components added to Forest Plan. • Renewable Energy plan components added to Forest Plan. • Transportation Systems Corridors plan components added to Forest Plan.

Table 2-12
Land Use Designation, Suitable, and Projected Harvest Acres for Alternative 4[1]

Land Use Designation Group	Acres Allocated
Wilderness LUD Group[2]	5,908,217
Natural Setting LUD Group – No YG Harvest [3]	7,456,012
Natural Setting LUD Group – With YG Harvest [4]	0
Development LUD Group[5]	3,355,323
Total National Forest System lands	16,719,552
Suitable Acres	**Acres Allocated**
Suitable Acres-Old Growth	259,788
Suitable Acres-Young Growth	250,216
Projected Harvest	**Acres Allocated**
Projected Harvest Acres after 25 Years	
Old Growth	22,636
Young Growth	37,073
Projected Harvest Acres after 100 Years	
Old Growth	42,831
Young Growth	223,813

1 When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for Renewable Energy and Transportation Systems Corridors because the transportation projects are a series of corridors with undefined width and imprecise locations and not all renewable energy site locations are known. Totals may not exactly equal the sum of individual entries due to rounding.

2 Includes Wilderness and National Monument LUDs.

3 Includes all Natural Setting LUDs: LUD II, Research Natural Area, Municipal Watershed, Wild, Scenic, and Recreational River, Old Growth Habitat, Special Interest Area, Remote Recreation, and Semi-Remote Recreation LUDs.

4 Includes no LUDs that are suitable for YG harvest.

5 Includes Timber Production, Modified Landscape, and Scenic Viewshed LUDs. Experimental Forest is also included, even though it is technically not a Development LUD.

Figure 2-8
Wilderness, Natural Setting (with and without Young Growth Harvest), and Development LUDs on the Tongass National Forest under Alternative 4

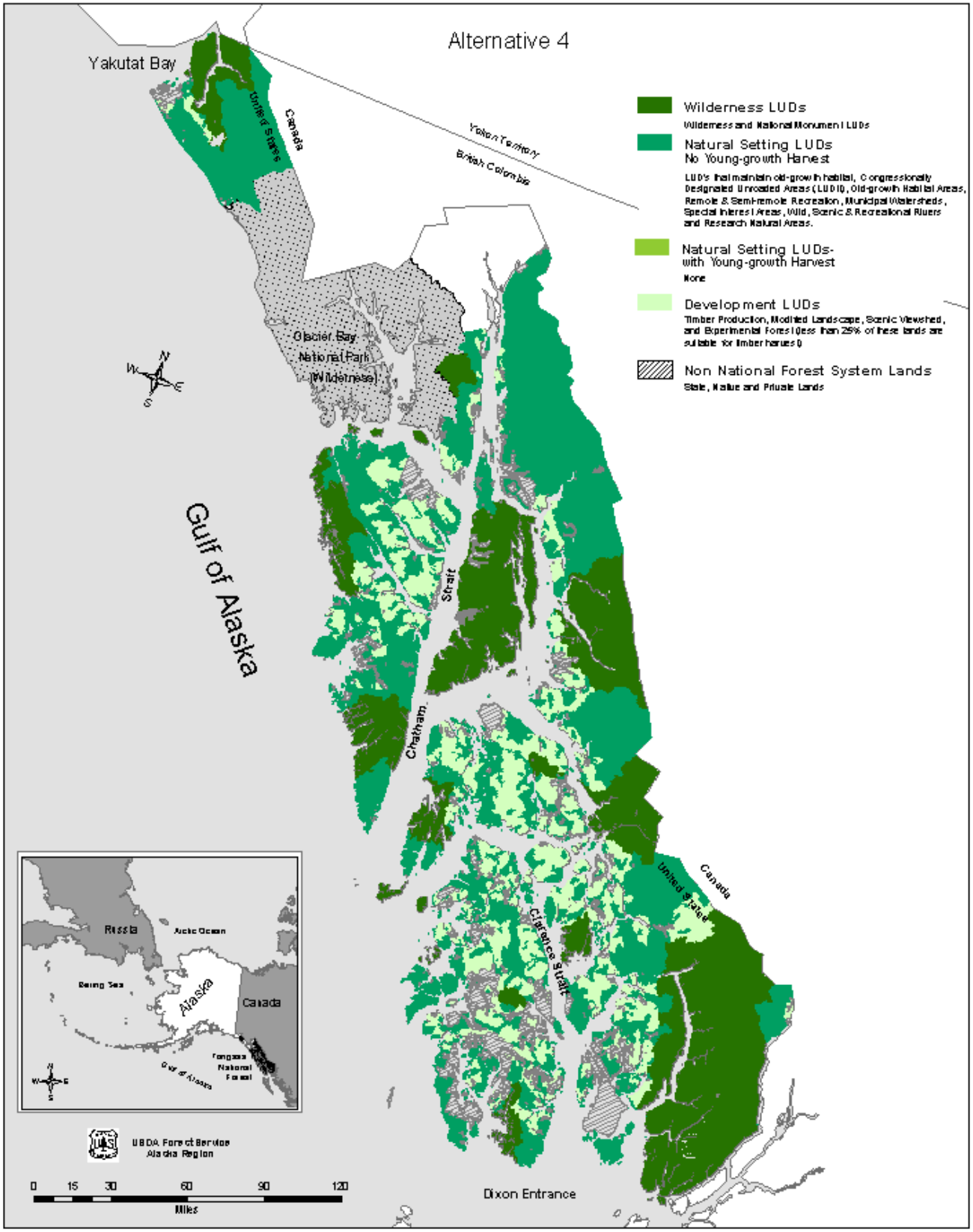


Table 2-13
Selected Outputs and Measures Associated with Alternative 4[1]

Resource/Category	Output/Measure
Percent in Wilderness LUD Group	35%
Percent in Natural Setting LUD Group with No YG Harvest	45%
Percent in Natural Setting LUD Group with YG Harvest	0%
Percent in Development LUD Group	20%
Suitable Area for Timber Management in Inventoried Roadless Areas – Old growth and Young Growth (acres)	0.0
Percent of Existing Productive Old Growth Harvested after 100 years	0.9%
Percent of Original Productive Old Growth remaining after 100 Years (92% in 2015)	91%
Estimated Forest Land Suitable for Timber Production–Old Growth (acres)	259,788
Estimated Forest Land Suitable for Timber Production–Young Growth (acres)	250,216
Long-term Projected Timber Sale Quantity (PTSQ)[3] in MMBF	89
Years until maximum PTSQ is achieved	23
Years until full transition is achieved (i.e., 41 MMBF of Young Growth is harvested)	16
Maximum New Road Construction after 100 Years (miles)	845
Maximum Road Construction on Decommissioned Road Grades after 100 Years (miles)	427
Maximum New Road Reconstruction after 100 Years (miles)	909

[1] Totals may not add exactly due to rounding.
[2] PTSQ volumes expressed as annual averages volumes.

Alternative 5 (Preferred Alternative)

Framework and Expected Outcomes

Alternative 5 is the Forest Service Preferred Alternative. This alternative is based on the recommendations from the Tongass Advisory Committee (TAC), a formally established Federal Advisory Committee (see Appendix B of the proposed Forest Plan). The establishment of the TAC represents a turning point in Tongass management seeking new approaches, practices, and responses. The TAC offers a regionally focused, collaborative path toward an innovative opportunity for a viable young growth timber industry while honoring the suite of values – economic, ecological, social, and cultural – inherent in the Forest.

Like Alternatives 3 and 4, this alternative would allow old-growth harvest only within Phase 1 of the timber sale program adaptive management strategy. As in Alternatives 1 and 4, the 2001 Roadless Rule would apply and no old-growth or young-growth harvest would occur in roadless areas.

As in Alternative 3, Alternative 5 would allow young-growth harvest in all three phases of the timber sale program adaptive management strategy. It would allow young-growth management in development LUDs and in the Old-growth Habitat LUD including harvest in Beach and Estuary Fringe and RMAs outside of TTRA buffers within these same LUDs. However, harvest in the Old-growth Habitat LUD, Beach and Estuary Fringe, and RMAs outside of TTRA buffers would be allowed only during the first 15 years after Plan approval, and only patch cut (up to 10-acre openings with no more than 35 percent removal) or commercial thinning would be permitted. In Beach and Estuary Fringe, a 200-foot no-cut buffer adjacent to the shoreline would be required. Scenery standards (SIOs) for young growth management would be reduced to Very Low for all distance zones in the development LUDs only.

As noted previously, due to Public Law 113-291, CMAI requirements for determining the youngest age for harvest would be eliminated on up to 50,000 acres of young-growth. Beyond that, the minimum harvest age would continue to be flexible under exceptions allowed by NFMA.

The Forest Plan would include new management direction that improves flexibility in renewable energy development under this alternative.

Among the action alternatives, Alternative 5 would provide the second smallest amount of timber volume (old growth and young growth combined), but the second largest amount of young-growth volume in the suitable base. Table 2-14 summarizes the components of Alternative 5 and Table 2-15 summarizes the mapped suitable acres in this alternative for young growth and old growth.

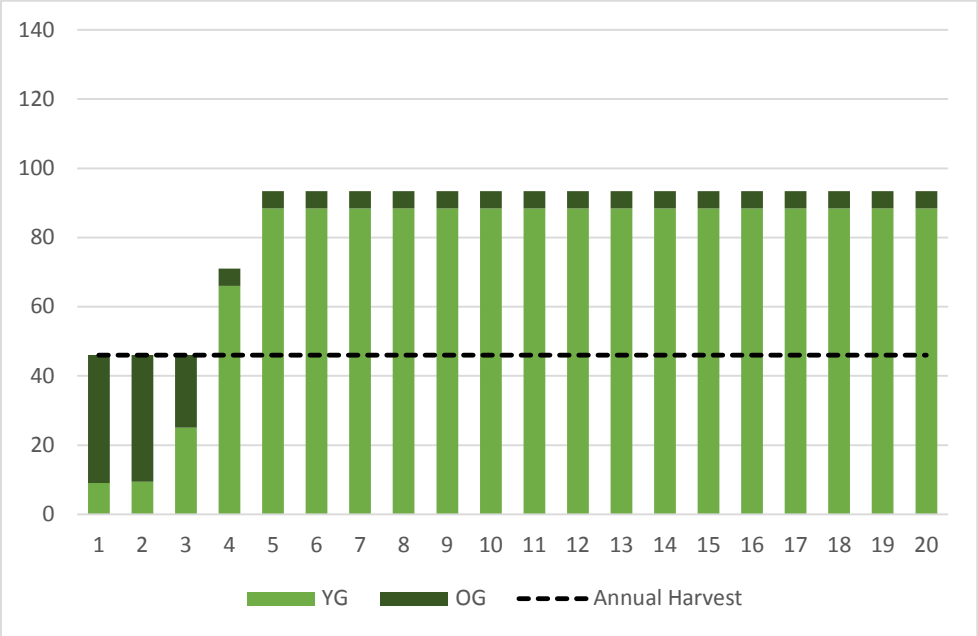
This alternative would harvest timber at a rate of 46 MMBF per year (equivalent to the harvest needed to meet the projected timber demand, see Table 2-1). It would emphasize young growth and minimize old growth while maintaining 46 MMBF per year. As such, it is expected to produce an average of about 9 MMBF of young growth and 37 MMBF of old growth per year during the first 10 years (Figure 2-9). From Year 11 through Year 15, it is projected to produce an average of 25 MMBF of young growth and about 21 MMBF of old growth per year. Alternative 5 would likely reach a full transition harvest of 41 MMBF of young growth about Year 16. Young-growth harvest is expected to continue to increase at a rapid rate after Year 16 and is expected to reach an upper limit of 88 MMBF about Year 23. The old-growth harvest rate would be held at 5 MMBF per year to support small and micro sales.

The majority (over 80 percent) of the Forest would remain in a natural state including IRAs. Old-growth conditions would prevail on forest lands within the IRAs.. Young-growth harvest would be increasingly emphasized during a transition period and the existing timber industry is maintained and given the opportunity to transition to a dominantly young-growth based industry over the next 10 to 15 years. Following the transition period, the young-growth based timber industry has the potential for growth as more young-growth stands become economic to harvest. Young growth is harvested only by patch cutting or commercial thinning in non-development LUDs, Beach and Estuary fringe, and RMAs outside of TTRA buffers. An old-growth based industry would continue after transition with an annual volume of about 5 MMBF being offered through the small and micro sale programs. A mixture of old growth, recently harvested areas, and various ages of young growth would occur within roaded areas. Recreation, tourism, and subsistence opportunities would continue to emphasize natural setting types, although some additional roaded opportunities would be developed. Scenery impacts would occur in some sensitive areas because scenery standards for young growth harvest would be very low.

Land Use Designations

If Alternative 5 is selected, the LUD allocation acres and the suitable acres shown in Table 2-11 would result. Figure 2-10 shows the distribution of LUDs across the Tongass under Alternative 5 according to four LUD groups (see Table 2-15 for definitions of the LUD groups). Color maps showing both LUDs and lands suitable for timber production for Alternative 5 are included in the *Map Folder* of the CD version of the DEIS and in the *Map Packet* accompanying the DEIS hard copy.

Figure 2-9
Projected Timber Sale Quantity (average annual harvest) over 100 Years in 5-Year Periods under Alternative 5 showing Volume (MMBF) contributed by Old-Growth (OG) and Young-Growth (YG)



Management Prescriptions

Under Alternative 5, the management prescriptions identified in the proposed Forest Plan (accompanying this DEIS) would be adopted. A track changes version of is available online. Clarifications and deletions to the 2008 Forest Plan are shown in Chapters 1, 2, 3, and 4 and additions to the Forest Plan are provided in Chapter 5. The similarities and differences among the alternatives, with respect to the proposed Forest Plan, are detailed in Appendix F to this DEIS.

Selected Outputs

Table 2-16 displays selected outputs and other measures associated with this alternative.

Table 2-14
Key Components of Alternative 5

Old-growth Harvest
• Allows harvest only within Phase 1 of the 2008 Timber Sale Program Adaptive Management Strategy. • No harvest is allowed in Inventoried Roadless Areas
Young-growth Harvest
• Allows harvest in Development LUDs, including clearcutting, and entry into all phases of the Timber Sale Program Adaptive Management Strategy without regard to harvest levels. • Allows harvest in Old Growth Habitat LUDs, but not in other Non-development LUDs or on islands less than 1,000 acres • No harvest is allowed in Inventoried Roadless Areas • Commercial harvest is allowed in Beach Fringe outside of a 200-foot buffer and in RMAs outside of TTRA buffers • In Old Growth Habitat LUDs, Beach Fringe (outside of a 200-foot buffer) and in RMAs outside of TTRA buffers, clearcutting is not allowed, but patch cut (<10-acre openings and a maximum of 35% removal) is allowed, along with commercial thinning. Harvest is allowed in these land categories only during the first 15 years after plan approval. • There is flexibility to harvest at a younger age than 95 percent of CMAI throughout the life of the Plan. • The scenery standards (SIOs) would be reduced to Very Low in Development LUDs only.
LUD Changes
• Old Growth Habitat LUDs were modified to correspond with the biologically preferred alternative in areas where they were negatively affected by land conveyances and other changes resulting from Public Law 113-291. • The Transportation and Utility Systems overlay LUD is removed.
New Plan Components (Chapter 5)
• Young-growth plan components added to Forest Plan. • Renewable Energy plan components added to Forest Plan. • Transportation Systems Corridors plan components added to Forest Plan.

Table 2-15
Land Use Designation, Suitable, and Projected Harvest Acres for Alternative 5[1]

Land Use Designation Group	Acres Allocated
Wilderness LUD Group[2]	5,908,217
Natural Setting LUD Group – No YG Harvest [3]	996,700
Natural Setting LUD Group – With YG Harvest	6,459,313
Development LUD Group[4]	3,355,323
Total National Forest System lands	16,719,552
Suitable Acres	**Acres Allocated**
Suitable Acres-Old Growth	259,788
Suitable Acres-Young Growth	333,464
Projected Harvest	**Acres Allocated**
Projected Harvest Acres after 25 Years	
Old Growth	23,223
Young Growth	37,390
Projected Harvest Acres after 100 Years	
Old Growth	43,167
Young Growth	261,850

[1] When more than one LUD is applied to the same area, such as a Special Interest Area within Wilderness, only the acreage of the more restrictive LUD is included. The acreage for the Minerals LUD would be 249,570; these acres are not included in the table because the Minerals LUD is an overlay. No acreages have been calculated for Renewable Energy and Transportation Systems Corridors because the transportation projects are a series of corridors with undefined width and imprecise locations and not all renewable energy site locations are known. Totals may not exactly equal the sum of individual entries due to rounding.

[2] Includes Wilderness and National Monument LUDs.

[3] Includes all Natural Setting LUDs: LUD II, Research Natural Area, Municipal Watershed, Wild, Scenic, and Recreational River, Old Growth Habitat, Special Interest Area, Remote Recreation, and Semi-Remote Recreation LUDs.

[4] Includes Timber Production, Modified Landscape, and Scenic Viewshed LUDs. Experimental Forest is also included, even though it is technically not a Development LUD.

Figure 2-10
Wilderness, Natural Setting (with and without Young Growth Harvest), and Development LUDs on the Tongass National Forest under Alternative 5

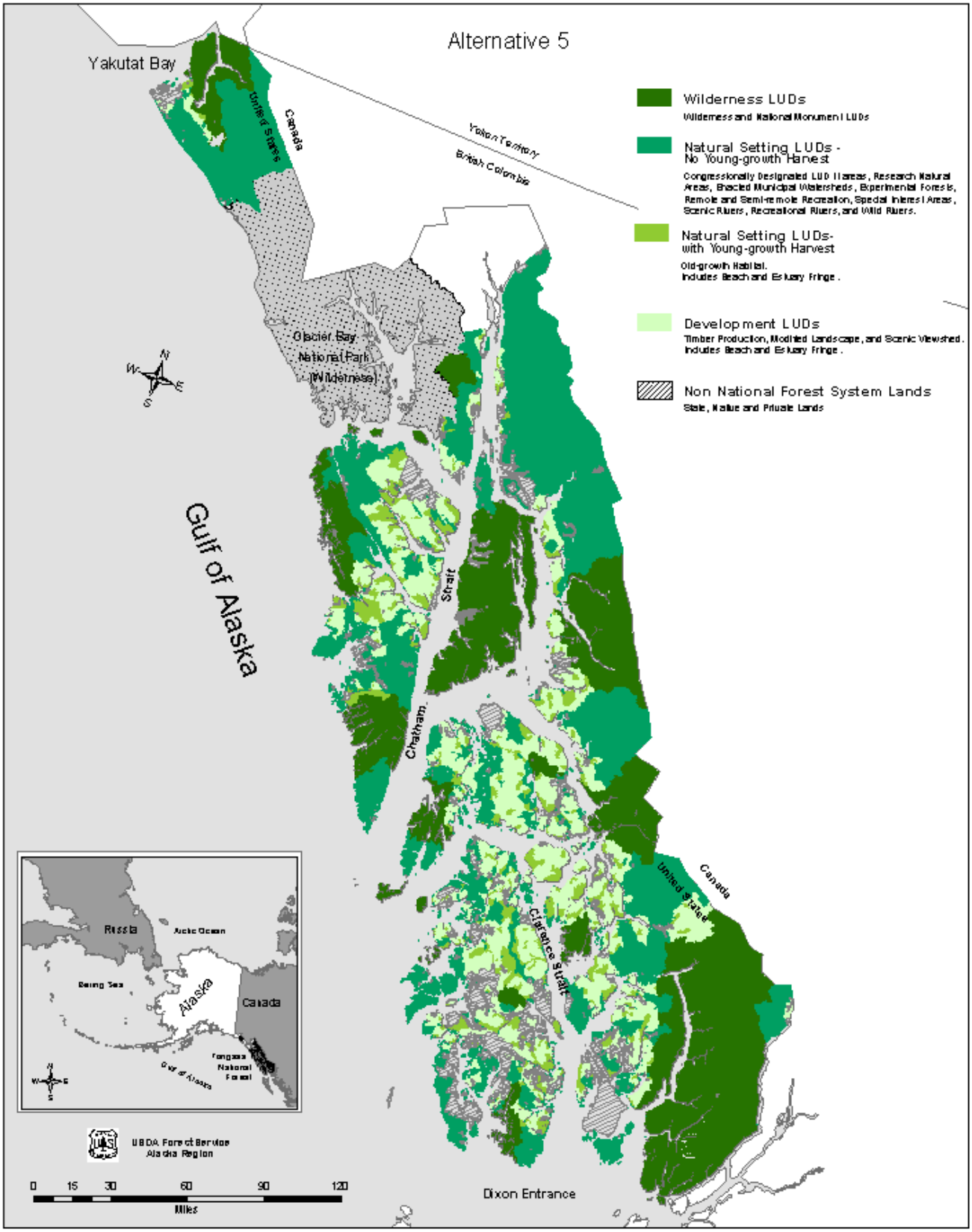


Table 2-16
Selected Outputs and Measures Associated with Alternative 5[1]

Resource/Category	Output/Measure
Percent in Wilderness LUD Group	35%
Percent in Natural Setting LUD Group with No YG Harvest	38%
Percent in Natural Setting LUD Group with YG Harvest	7%
Percent in Development LUD Group	20%
Suitable Area for Timber Management in Inventoried Roadless Areas – Old growth and Young Growth (acres)	0.0
Percent of Existing Productive Old Growth Harvested after 100 years	0.9%
Percent of Original Productive Old Growth remaining after 100 Years (92% in 2015)	91%
Estimated Forest Land Suitable for Timber Production-Old Growth (acres)	259,788
Estimated Forest Land Suitable for Timber Production-Young Growth (acres)	333,464
Long-term Projected Timber Sale Quantity (PTSQ)[2] in MMBF	93
Years until maximum PTSQ is achieved	23
Years until full transition is achieved (i.e., 41 MMBF of Young Growth is harvested)	16
Maximum New Road Construction after 100 Years (miles)	942
Maximum Road Construction on Decommissioned Road Grades after 100 Years (miles)	490
Maximum New Road Reconstruction after 100 Years (miles)	1,040

[1] Totals may not add exactly due to rounding.
[2] PTSQ volumes expressed as annual averages volumes.

Comparison of the Alternatives

This section briefly compares the environmental consequences of the five alternatives with respect to the significant issues described in Chapter 1. This comparison is based on the effects analyses presented in Chapter 3.

The following subsections provide the issue statement for each of the significant issues described in Chapter 1, and the units of measure used to analyze their effects. Hereafter the term "issues" is synonymous with "significant issues." Following these subsections, the alternatives are compared with respect to each issue. Important comparison tables are also presented. Table 2-17 (at the end of this section) compares each alternative in terms of the key elements that define the alternatives. Table 2-18 compares each alternative in terms of the quantitative and qualitative measures associated with each alternative. This table allows the reader to compare the effects of the alternatives on all issues simultaneously, so that a cumulative picture of the net effects can be obtained.

Issue 1 – Young-growth Transition

Issue Statement: The Secretary of Agriculture directed asked the Forest Service to transition to a young-growth-based timber management program on the Tongass National Forest in 10 to 15 years, which is more rapid than planned. This transition is intended to support the Tongass managing its forest for an ecologically, socially, and economically sustainable forest management program and reduce old-growth harvest while still providing economic timber to support the local forest products industry.

Units of Measure

- Lands suitable for timber production
- Acres of harvest of young growth vs. old growth over time

- Time required to fully transition to young-growth harvest
- Financial efficiency (discounted net revenue)
- Number of annualized direct jobs supported

Comparison

The purpose and need for this project is primarily based on a memorandum from the Secretary of Agriculture (see Chapter 1) that directs management of the Tongass National Forest to expedite the transition away from old-growth timber harvesting and towards a forest products industry that utilizes predominantly second-growth – or young-growth – forests. Secretary Vilsack's memorandum also guides that the transition should be implemented in a manner that preserves a viable timber industry that provides jobs and opportunities for Southeast Alaska residents. USDA's goal is to effectuate this transition, over the next 10 to 15 years, so that at the end of this period the vast majority of timber sold by the Tongass will be young growth. This timeframe will conserve old growth forests while allowing the forest industry time to adapt.

Because of the Secretary's memorandum, the existing condition emphasizes a transition to young growth and minimizes old-growth harvest, but does this within the constraints of the 2008 Forest Plan. Alternative 1 (No Action) would result in full transition to a predominantly young-growth-based industry in about 32 years, well beyond the 15 year goal presented by the Secretary. In contrast, all of the action alternatives would result in a full transition in about 12 to 16 years. Because these timeframes represent full transition, the period in which the "vast majority of timber sold by the Tongass will be young growth" is expected to be about 10 to 15 years for the action alternatives. Of the action alternatives, the fastest transition would occur with Alternative 2 and the slowest would occur with Alternatives 4 and 5.

All of the alternatives are expected to support from 187 to 234 annualized direct jobs during the first decade. The highest number of direct jobs supported would be with Alternative 2 and the lowest with Alternative 1. In addition, each alternative is expected to meet the projected demand for Tongass timber. Therefore, each alternative is expected to meet the criterion of maintaining a viable industry. However, it is unclear how fast industry will be able to "retool" mills and harvesting equipment and how markets will react to switching from old-growth to young-growth products; thus, this criterion is associated with a relatively high degree of uncertainty.

Under all alternatives, the harvest of old growth would diminish over time and the harvest of young growth would increase. Therefore, all of the alternatives would "conserve old-growth forests." The highest old-growth harvest in the first 25 years would be about 40,000 acres with Alternative 1. Each of the action alternatives would harvest substantially less old growth, ranging from 13,000 acres with Alternative 2 to 23,000 acres with 4 and 5. The same pattern among the alternatives occurs with the 100-year harvest as well.

Issue 2 – Renewable Energy

Issue Statement: The development of renewable energy projects on the Tongass would help Southeast Alaska communities reduce fossil fuel dependence, stimulate economic development, and lower carbon emissions in the Region.

Units of Measure

- Improved flexibility in siting and development of renewable energy projects

Comparison

Another important part of the purpose and need for this project is the need to make changes to the Forest Plan so that renewable energy projects are more permissible. The purpose is to stimulate economic development in Southeast Alaska communities, and provide low-carbon energy alternatives, thereby displacing the use of fossil fuel. Under the current Forest Plan, siting of energy projects is limited in certain LUDs, and it would remain that way under Alternative 1. Under each of the action alternatives (Alternatives 2, 3, 4, and 5), changes would be made to the Forest Plan that would result in improved flexibility in siting and development of renewable energy projects.

Issue 3 – Inventoried Roadless Areas

Issue Statement: Timber harvest and road building that occurred in roadless areas before the 2001 Roadless Area Conservation Rule (2001 Roadless Rule) was enacted and during the Tongass roadless exemption period changed the values or features that often characterize inventoried roadless areas in some locations. In addition, whether or not the Tongass would manage the Forest under an exemption to the Roadless Rule or not is the subject of ongoing litigation. Currently, the Tongass does not enter roadless areas for timber harvest or road construction. However, in the future, this could change.

Units of Measure

- Suitable acres for timber management within inventoried roadless areas under each alternative
- Roadless characteristics protected under each alternative

Comparison

Alternatives 1, 4, and 5 do not enter roadless areas. In Alternative 2, roadless areas that were previously roaded would be available for road construction and timber harvest and in Alternative 3, all roadless areas would be available. With both Alternatives 2 and 3, entry into roadless areas would not be permitted without rulemaking to approve it. Acres of lands suitable for timber production in roadless areas would range from 0 acres for Alternatives 1, 4, and 5, to 33,000 acres for Alternative 2, to 251,000 acres for Alternative 3. As a result, the protection of roadless characteristics would be excellent with Alternatives 1, 4, and 5, high with Alternative 2, and moderately high with Alternative 3.

Issue 4 – Wildlife Habitat and the Conservation Strategy

Issue Statement: Old-growth timber harvest has changed the composition and spatial patterns of terrestrial wildlife habitats. How the resulting young-growth is managed may influence the future ecological integrity of the landscape at various scales. Changes made to suitable lands designated for development, and to plan components (e.g., standards and guidelines) may affect old-growth habitat for wildlife and the Tongass Conservation Strategy and contributing elements to old-growth reserves (e.g., riparian, beach and estuary habitats).

Units of Measure

- Acres of productive old growth protected under each alternative
- Acres of high-volume productive old growth protected under each alternative
- Acres of large-tree productive old growth protected under each alternative

- Acres of young-growth harvest in Beach and Estuary Fringe by alternative
- Acres of young-growth harvest in Riparian Management Areas by alternative
- Acres of young-growth harvest in Old-Growth Habitat LUDs (OGRs) and other non-development LUDs by alternative
- Average total and open road densities and percentage of Wildlife Analysis Areas (WAAs) in road density categories on NFS and all lands
- Indicators of habitat capability using habitat models
- Cumulative harvest and road development on all Southeast Alaska lands

Comparison

Relative to old-growth habitat conservation, Alternative 1 would have the highest harvest (1.2 percent of existing POG), followed by Alternatives 4 and 5 (0.9 percent of existing POG), followed by Alternatives 2 and 3 (0.6 percent of existing POG). The change in the percent of original POG remaining after 100 years would follow the same pattern. Currently, 92 percent of original POG is remaining; under Alternatives 1, 2, 3, 4, and 5 this percentage would drop by 1 percent after 100 years. This same pattern would continue for the percent reduction in high-volume POG and for the percent reduction in large-tree POG.

Beach and Estuary Fringe harvest would be lowest under Alternative 1 (no harvest). Under the action alternatives, no harvest of POG would occur, but harvest impacts for young growth would be highest under Alternative 2, which would include the second highest amount of acres but would allow clearcutting. Under Alternatives 3 and 4, considerable young-growth acreage would be harvested, but only by commercial thinning, which would result in much lower effects than clearcutting. Alternative 5 would have the lowest effect on Beach and Estuary Fringe among the action alternatives because the acreage is lowest and only patch cut (up to 10-acre openings with up to 35 percent stand removal) or commercial thinning would be permitted with a one-time entry restriction.

For RMAs, the lowest effects would be associated with Alternatives 1, 3, and 4, which would permit no harvest in RMAs. Alternative 2 would have the greatest harvest impacts in RMAs because it would include the highest amount of acreage and would allow clearcutting during the first 15 years of Forest Plan approval and commercial thinning thereafter. Effects to RMAs would be lower under Alternative 5 due to a lower amount of acres and group selection or commercial thinning would be permitted but only during the first 15 years after Forest Plan approval with a one-time entry restriction.

In the Old-Growth Habitat LUD, Alternatives 1 and 4 would allow no harvest. The greatest amount of harvest in the Old-growth Habitat LUD would occur under Alternative 2, followed by Alternatives 3 and 5. Effects would be greatest under Alternative 2 because it would allow clearcutting, and less under Alternative 3 because only commercial thinning would be allowed, followed by Alternative 5 which would allow group selection or thinning but only during the first 15 year of Forest Plan approval and with a one-time entry restriction.

Average total road density across WAAs (NFS lands only) under all alternatives would be approximately 0.2 miles per square mile, an increase of 0.03 to 0.04 above existing levels. Average open road density across WAAs (NFS lands only) would be approximately 0.1 miles per square mile, an increase of 0.01 under all alternatives. Approximately 82 percent of WAAs would have open road densities of 0.7 miles per square mile or less under the action alternatives. Therefore, any potential increase in hunter access or risk of overharvest for wildlife species would be minor and

localized, and would not be measurable at the forest-wide scale under any of the alternatives.

The transition to young-growth management would reduce the long-term decrease in deer habitat capability due to decreased POG harvest. Based on Interagency Deer Habitat Capability model outputs, Alternatives 2, 3, 4, and 5 would maintain approximately 1 to 2 percent more of the existing habitat capability than Alternative 1. Forest-wide all alternatives would maintain 98 to 99 percent of the existing deer habitat capability. Based on the Forage Resource Evaluation System for Habitat (or FRESH) deer model, the existing level of habitat quality would be maintained under Alternative 1 or increased by 1 to 4 percent under the action alternatives.

Cumulative POG harvest (all landownerships) would be greatest under Alternative 1, followed by Alternatives 5, 4, 3, and 2. Cumulative effects would be least under the alternatives that propose the shortest young-growth transition time. After 100 years of Forest Plan implementation, approximately 83 percent of the original (19540) total POG forest would be maintained under all of the alternatives. Alternative 1 would maintain approximately 81 percent and 66 percent of the original high-volume and large-tree POG, respectively. The action alternatives would maintain 82 percent and 64 percent of these POG categories, respectively. Forest-wide cumulative road densities (all land ownerships) would be similar among alternatives (0.45 to 0.46 miles per square mile), representing an increase of 0.11 to 0.12 miles per square mile above current conditions.

Table 2-17
Comparison of Key Elements of the Alternatives

Element	Alternative 1	2	3	4	5
Timber Sale Program Adaptive Management Strategy Phases	2008 Forest Plan	2008 Forest Plan, except can enter Phases 2 and 3 for YG without limitation[1]	2008 Forest Plan, except Phase 1 only for OG; can enter Phases 2 and 3 for YG without limitation	2008 Forest Plan, except Phase 1 only for YG and OG	2008 Forest Plan, except Phase 1 only for OG; can enter Phases 2 and 3 for YG without limitation
Roadless[2]	No entry	Roadless entry permitted in previously roaded IRAs after rulemaking	Roadless entry permitted after rulemaking	No entry	No entry
Non-Development LUDs	No	Yes	Yes	No	Old Growth Habitat LUD only; Patch cut (<10 acre openings; <35% of stand) no harvest after 15 years
Beach and Estuary Fringe	No	Clearcutting in Beach Fringe for first 15 years; only Commercial. Thinning thereafter	Commercial Thinning only	Commercial Thinning only	Patch cut (<10 acre openings; <35% of stand)) outside of 200-ft buffer; no harvest after 15 years
Riparian Management Areas	No	Commercial. Thinning only outside of TTRA; 33% maximum stand removal	No	No	Patch cut (<10 ac openings; <35% of stand) outside of TTRA; no harvest after 15 years
High Vulnerability Karst	No	Commercial Thinning only	Commercial Thinning only	Commercial Thinning only	No
Rotation Age	Flexible for first 50,000 acres of young-growth harvest	Flexible for life of plan	Flexible for life of plan	Flexible for life of plan	Flexible for life of plan
Scenery Standards for Young-Growth	2008 Forest Plan	SIOs relaxed to Very Low	SIOs relaxed by one level from 2008 Forest Plan	2008 Forest Plan	SIOs relaxed to Very Low for YG in Development LUDs only
Scenery Standards for Renewable Energy	2008 Forest Plan	SIOs relaxed to Very Low	2008 Forest Plan	2008 Forest Plan	2008 Forest Plan
LUDs	No change	Old Growth Habitat LUDs modified	Old Growth Habitat LUDs modified	Old Growth Habitat LUDs modified	Old Growth Habitat LUDs modified
Estimated Time to Full Transition	32 years	12 years	13 years	16 years	16 years
Renewable Energy Development	No change	New management direction that is more permissive	New management direction that is more permissive	New management direction that is more permissive	New management direction that is more permissive
Other	No change	New plan components	New plan components	New plan components	New plan components

YG = Young Growth, OG = Old Growth

[1] Under the 2008 Forest Plan, the scheduled timber sale program was generally confined to Phase 1 until such time as the level of timber harvest reached at least 100 MMBF for two consecutive years.

[2] Timber harvest is currently inconsistent with the 2001 Roadless Rule. Proposed timber harvest in IRAs could not occur until the Roadless Rule is changed or the Tongass Roadless Rule Exemption is reinstated.

Table 2-18
Comparison of Alternatives

Resource/Category	Unit of Measure	Alternative 1	2	3	4	5
Key Issue 1 – Young-Growth Transition						
Acres of land suitable for timber production	Old Growth	316,417	337,373	497,831	259,788	259,788
	Young Growth	250,771	369,671	330,969	250,216	333,464
Acres of harvest after 25 years	Old Growth	40,140	12,927	13,856	22,636	23,223
	Young Growth	7,271	69,362	52,094	37,073	37,390
Acres of harvest after 100 years	Old Growth	62,413	30,017	31,198	42,831	43,167
	Young Growth	201,003	330,517	304,792	223,813	261,850
Approximate Years to full transition (YG harvest = 41 MMBF)	years	32	12	13	16	16
Financial efficiency: total discounted net revenue after 25 years	$ millions	$204	$95	$45	116	$113
Number of annualized direct jobs supported (first decade)	# jobs	187-217	200-234	197-231	189-219	189-219
Key Issue 2— Renewable Energy						
More permissive in Siting Renewable Energy Projects	Yes/No	No	Yes	Yes	Yes	Yes
Key Issue 3 – Roadless Areas[1]						
Lands suitable in inventoried roadless areas	Old-Growth acres	0	22,278	238,043	0	0
	Young-Growth acres	0	10,890	12,841	0	0
Roadless characteristics protected	Qualitative	Excellent	High	Moderately High	Excellent	Excellent
Key Issue 4 – Wildlife Habitat and the Conservation Strategy						
Percent of existing productive old growth harvested after 100 years	Percent	1.2	0.6	0.6	0.9	0.9
Percent of original productive old growth remaining after 100 years (92% in 2015)	Percent	90	91	91	91	91
Percent of original high volume productive old growth remaining after 100 years (83% in 2015)	Percent	82	83	83	83	83
Percent of original large-tree productive old growth remaining after 100 years (82% in 2015)	Percent	80	81	81	81	81
YG Harvest in Beach and Estuary Fringe after 100 years (all prescriptions)	Acres	0	30,892	41,489	14,865	3,546
YG Harvest in Riparian Management Areas after 100 years (all prescriptions)	Acres	0	36,092	0	0	882

Table 2-18 (continued)
Comparison of Alternatives

Resource/Category	Unit of Measure	Alternative 1	2	3	4	5
YG Harvest in Old Growth Habitat LUD after 100 years (all prescriptions)	Acres	0	32,800	29,250	0	1,796
Average road density on NFS lands after 100 years (0.20 miles/square mile in 2015)	Miles/Sq. Mile	0.23	0.24	0.23	0.23	0.23
Average road density on All lands within Tongass boundary after 100 years (0.34 mile/sq.mi.in 2015)	Miles/Sq. Mile	0.45	0.46	0.45	0.45	0.45
Average open road density on NFS lands after 100 years (0.09 miles/square mile in 2015)	Miles/Sq. Mile	0.10	0.10	0.10	0.10	0.10
Average open road density on All lands within Tongass boundary after 100 years (0.23 miles/sq. mile in 2015)	Miles/Sq. Mile	0.32	0.32	0.32	0.32	0.32
Percent of WAAs with road density on NFS lands <0.7 miles/sq. mile (85.3% in 2015)	Percent	82.1	81.6	82.1	83.2	82.1
Percent of WAAs with road density on All lands <0.7 miles/sq. mile (77.9% in 2015)	Percent	71.6	72.1	71.6	72.1	71.6
Species-Specific Effects						
Goshawks – Harvest of high-volume POG forest after 100 years	Acres	26,275	12,636	13,134	18,031	18,173
Marten – Harvest of deep snow winter habitat (high-volume POG forest <800 feet elevation) after 100 years	Acres	15,887	7,439	5,453	9,806	9,883
Wolf – Percent WAAs with model-generated habitat capability of at least 18 deer per square mile after 100 years	Percent	29	30	30	29	29
Brown Bear and Black Bear – YG harvest in beach and estuary fringe and RMAs after 100 years	Acres	0	66,984	41,489	14,865	4,428
Endemic Mammals – Harvest of POG forest after 100 years	Acres	26,275	12,636	13,134	18,031	18,173
Deer habitat capability on NFS Lands after 100 years in Terms of Percent of Original (1954) Habitat Capability (89% currently)	Percent	87	88	88	88	88

[1] Timber harvest is currently inconsistent with the 2001 Roadless Rule. Proposed timber harvest in IRAs could not occur until the Roadless Rule is changed or the Tongass Roadless Rule Exemption is reinstated.